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ABSTRACT

Based on a survey of college students, graduates, and employers throughout Java, this report examines (1) reasons for pursuing higher education, channels of career information, frequency of and reasons for students changing majors, and the performance of the higher education system; (2) occupational expectations and their determinants; (3) methods of obtaining employment and their effectiveness; (4) the correspondence between education and work, and potential means to improve it; and (5) possible incentives to encourage graduates to work in rural areas. Chapter I and II of the report discuss, respectively, the state of knowledge concerning the relationship between education and employment, and basic concepts guiding this study. Objectives of the study are stated in chapter III, and chapters IV and V discuss methodology used and characteristics of the three samples. The next three chapters analyze students', graduates', and employers' survey responses. Finally, chapter IX offers seven statements summarizing the survey findings and three broad policy recommendations. Appendixes present the three questionnaires used, and tabulated responses. A bibliography is included. (MCG)

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HIGHER EDUCATION AND THE LABOUR MARKET IN THE JAVA REGION, INDONESIA

Hardjono Notodihardjo
Bikas C. Sanyal

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IIEP research report: (49)

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A contribution to the IIEP research project on "Higher Education and Employment", directed by Bikas C. Sanyal

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CONTENTS

		Page
I.	Introduction: The relationship between higher education and employment	1
II.	The conceptual framework	3
III.	The objectives of the research	5
IV.	Methodology followed: instruments used, data collected and statistics applied	6
V.	Sample characteristics	10
VI.	Students' perception and expectations	14
VII.	Graduates' perception and expectations	22
VIII.	Employers' perception and expectations	30
IX.	Summary of findings and implications for planning	36
X.	Appendices	39
	A. Student Questionnaire	41
	B. Graduate Questionnaire	55
	C. Employers' Questionnaire	70
	D. Statistical Tables: Tables 1-21	81
XI.	Bibliography	96

CHAPTER I

INTRODUCTION: THE RELATIONSHIP BETWEEN HIGHER EDUCATION AND EMPLOYMENT

Research on the relationship between education and employment has received significant attention in recent years among educational decision-makers, planners and administrators. It is now well recognised that simple quantitative forecasts of manpower needs cannot provide precise enough direction for the development of the education system. The relationship between education and employment can no longer be based on such forecasting models alone. The fact that there are aspects of this relationship which remain unknown makes it more complex. Researchers have to look into this unknown area, particularly at a time when the problem of unemployment among youth is becoming more and more critical. Overall open unemployment has been increasing at a very fast rate in almost all countries except those where the economic recession has not been serious. However, the number of such countries are very few and limited to the oil-exporting countries.

The problem in magnitude started increasing in the seventies. Although economic stagnation was believed to be the main cause behind this problem, it was also felt that many other factors were contributing to such a situation. These were sociological, psychological, administrative and organisational factors, which researchers had to identify in order to provide new tools for decision-makers to remedy this problem. However, such research has not always followed the same conceptual framework; different points of view about the relationship between education and employment have been the basis for different types of research. At one extreme, there is the point of view that the relationship between education and employment is artificially imposed by the society and vested interest plays a dominant role to keep a "status quo" in such a relationship, thus perpetuating social hierarchy, discrimination and segmentation in the society. At the other extreme, it is held that educational systems could be reformed to provide skills to meet the social and economic development needs, as well as to meet individual expectations for upward social mobility, without going into the socio-psychological complexity of the relationship, reducing the analysis to the traditional quantitative forecasting exercises.

In what follows, we attempt to take into account the influence of socio-psychological factors on the development of higher education in relation to employment, based on the belief that reform measures, if properly planned and implemented taking account of these factors, can reduce the problem of unemployment.

CHAPTER II

THE CONCEPTUAL FRAMEWORK

In the analysis of the relationship between higher education and employment, we are concerned with individual human beings and individual enterprises. Their background, attitudes and expectations play an important role in this relationship. What goes on in the labour market is a reflection of the social set-up, including the educational system. We believe that the attitudes and expectations of the individuals, their families, their community, and their early educational history influence directly the expectations of each individual in respect of his or her social role, as does the operation of the labour market through its selection criteria, recruitment practices, labour market information system, etc.

Similarly, motivation in respect of education is generated among others by the motivation in respect of occupation, functioning of the education system, the individual, family, community and early educational characteristics. It is considered that if a society is to be democratised, the education system, the economy and the society have to give emphasis to changing the micro characteristics so as to generate egalitarian occupational and educational expectations which would then lead to egalitarian educational and occupational careers of individuals.

The educational career of the individual is directly influenced by the educational expectations, the educational system, the individual, family, community and early educational characteristics, and indirectly among others by the occupational expectations. The items of educational career are type of institution attended and its location, field of study pursued, academic performance, change of subject during the course of studies, etc.

The occupational career is dependent directly upon the educational career, the labour market situation, the occupational expectations, and individual, family, community, early educational and occupational characteristics. The items of occupational career are career information received, placement services used, recruitment methods and selection criteria used, difficulty to obtain a job, type of post held, type of firm,

location, job satisfaction and utilisation of training/education on-the-job. Some of these items are also in the domain of the employers, and need to be checked with them to find whether the experience of the graduates matches with the employers' perceptions.

The basic thrust of our approach is that the education system can change the characteristics of the individuals, families and the community, so as to make the transition from institutions of higher education to work smoother.

CHAPTER III

THE OBJECTIVES OF THE RESEARCH

The present study on higher education and the labour market in the Java region of Indonesia is based on the above conceptual framework and has the following specific objectives:

1. to identify the factors influencing the pursuit of higher education, the role of career information, the horizontal mobility in higher education and to analyse the performance of the higher education system as perceived by students, graduates and employers;
2. to identify the nature of occupational expectations and the factors determining such expectations;
3. to analyse the method of obtaining employment and the performance of the employment system as perceived by students, graduates and employers;
4. to examine the correspondence between the world of education and the world of work and to identify methods to improve it; and finally
5. to identify factors which will motivate the students and the graduates to work in rural areas.

The present research is undertaken jointly by the Office of Educational and Cultural Research and Development (BP_3K) of the Ministry of Education and Culture, Indonesia, and the International Institute for Educational Planning (IIEP) of UNESCO, within the framework of the latter's research programme on education, employment and work.

CHAPTER IV

METHODOLOGY FOLLOWED: INSTRUMENTS USED, DATA COLLECTED AND STATISTICS APPLIED

The research constitutes a survey implemented simultaneously towards three kinds of respondents, i.e. students, graduates and employers. The research therefore can be classified as "cross sectional studies". The sampling procedure taken was "probability sampling" where "every element in the population has a known non-zero probability of being selected" (Kish, 1965).

It was decided that the student sample would consist of 1,000 students. This figure, based upon data supplied by the Planning Division of the Directorate General of Higher Education, constituted five per cent of the total student population, which, in 1980, was in its last grade of all the faculties except the education and pedagogy faculties, of all twelve state universities in Java, excluding all state IKIPs/Institutes of Teacher Training and Pedagogy.

If the number of students studying at state universities was known, there was no knowledge whatsoever on how many graduates of higher education institutions were working in industries at that time (1980). Fortunately, the Central Bureau of Statistics/BPS knew precisely how many industries there were throughout the country, both in the cities and in the regions. After studying and even scrutinising the industrial statistics in Java, it was decided which kinds of industries would be treated as subjects of research i.e. all those having manpower of 100 persons or more situated in five big cities in Java (North Jakarta, Bandung, Semarang, Surabaya and Yogyyakarta).

According to BPS' classification, all industries with a manpower of 100 persons or more are considered to be "large", which is different from "medium", "small" and "household" industries having manpower of 20-99, 5-19 and less than five persons respectively.

Further examination of the statistics, however, made it clear that the range of all large industries, in terms of manpower, was great. In order to meet the objectives of this research, therefore, all large-scale industries, based upon BPS' classification, were further classified into the following:

1. large industries, having manpower of 1,000 persons or more;
2. medium industries, having manpower of 500-999 persons;
3. small industries, having manpower of 100-499 persons.

After analysing data and statistics from BPS, it was immediately known how many industries there were in those five big cities in Java. The number of industries - food and drink, textiles, wood, paper, chemicals, ceramics, basic iron and steel, equipment, radio and TV and music and sports instruments - could be summarised as shown in the following table, according to their location:

Table 1. Number of industries in five big cities in Java

No.	Cities	Industries			Total
		Large	Medium	Small	
1.	North Jakarta	6	12	61	79
2.	Bandund	3	7	59	69
3.	Semarang	2	7	34	43
4.	Surabaya	3	16	68	87
5.	Yogyakarta	-	1	13	14
	Total	14	43	235	292

Since it was hoped that each kind of industry was well represented in the research, a sample of industries in each of the cities is as follows:

1. North Jakarta : 53
2. Bandung : 38
3. Semarang : 27
4. Surabaya : 47
5. Yogyakarta : 9

so that the total of the industries used as samples in the study was 174, or 59 per cent of all existing industries in the five big cities.

After the sample of industries was known, the next thing to be done was to conduct research on all graduates of higher educational institutions working in all the industries chosen in the samples.

From the above description it was obvious that sampling of graduates was determined through sampling of industries. This was primarily, as mentioned before, due to the fact that data on graduates working in industries were not yet available.

The procedure taken to determine the sample of graduates can, at the same time, be utilised to determine the sample of employers. Since one employer only was needed from each industry, it was expected therefore that there would also be 174 employers involved in the study as the sample employers.

To collect data from students, graduates and employers, three kinds of questionnaires were developed and used. i.e. student questionnaire, graduate questionnaire and employer questionnaire respectively. The administration of data collection was carried out through visits to the fields and by directly interviewing all those respondents. Data collection from state universities was relatively easy. Data collection from industries, however, was difficult and both energy and time consuming. Finally, the field data collection which was carried out for a period of five months, from January to May 1980, revealed the following:

(a) students : 998
(b) graduates : 228
(c) employers : 125

All the collected data were then examined one by one, coded, recorded and validated as clean data and stored on three tapes. The next step was to process the data at some computer centres in Jakarta using the Statistical Package for Social Sciences (SPSS) developed by Norman H. Nie et al. In addition, the data were also processed manually. Statistics applied (for data analysis) were chi-square and rank correlation. From the data computerisation it was later known that there were 400 variables in the study. This is easy to understand because the link between education and employment in Indonesia is complicated. The data processing also produced 250 cross-tabulation lists. Out of those lists, 77 tables have been chosen to be included in the original report written in Bahasa Indonesia (the Indonesian language).

The following sections will describe the findings of the research, which will be expected to provide some broad pictures of:

(a) students' perception and expectations;

(b) graduates' perception and expectations; and

(c) employers' perception and expectations.

However, before providing the analysis of the broad pictures, short descriptions of sample characteristics will be given: student sample characteristics, graduate sample characteristics and employer sample characteristics. These descriptions of sample characteristics will certainly make it easier to understand the meaning of the whole perspectives.

CHAPTER V

SAMPLE CHARACTERISTICS

1. Student sample

More than one third (36.8 per cent) of the students come from the University of Gadjah Mada (UGM) in Yojyakarta. In second place come students from the Institute of Technology Bandung (ITB) and the University of Padjadjaran, also in Bandung, both of which have an equal number of students and each constitutes approximately one tenth (11 per cent) of the total students involved in this research.

With regard to the field of study of the students, 28.7 per cent are studying engineering. The second group of students are studying economics (13.3 per cent), followed by those who are studying medical sciences (9.3 per cent) in third place. The three fields of study, i.e. engineering, economics and medical sciences, seem to be the favourites of those wishing to continue their studies in higher education institutions.

Almost half of the students (48.6 per cent) are between 25 and 29 years old. The next biggest group of students (43.8 per cent) comprises those who are less than 25 years old, the number of which is close to the first group of students. Since the average age of students is under 25, and assuming that the average duration of study is five years, it can be said that the students are young ones, entering primary schools when they were between 7-8 years of age.

The number of male students (76.2) exceeds that of female students. The former is more than three times the latter.

Ethnically, native students constitute the biggest (95.6 per cent) group. Native students are those whose parents are native. Those whose parents - either their mothers or their fathers - are non-native are relatively small, and most of this group of students are of Chinese origin.

The highest level of education (34.7 per cent) of their mothers is primary education, followed, in second place (25.4 per cent), by those whose highest level of education is junior secondary, and, in third place (23.4 per cent) is senior secondary. The highest level of education of their fathers is, in first place (30.9 per cent), senior high school, and, in second place (21.9 per cent) primary school, followed by junior high

school in third place (21.4 per cent). Since all students involved in the study are on their last grades of their study in university, and assuming that all of them, at least most of them, will graduate in the immediate future, it is obvious therefore that social mobility has taken place, in the sense that the highest level of education of the students is higher than that of their parents.

More than half of the students (61.2 per cent) have their fathers as their guardians, and then follows those whose guardians are their mothers (11.2 per cent) and, in third place (7.6 per cent), those whose guardians are their uncles.

On their marital status, most of them (83 per cent) are not married. Approximately one tenth of those who are married have no children.

Almost three quarters of the students (74 per cent) are financed by their family. About one tenth of the students finance themselves, and another 5.4 per cent obtain bursaries from the government.

2. Graduate Sample

31.1 per cent of the graduates work in chemical industries. In second place (29.8 per cent) are those who work in equipment industries, including radio and television industries, followed by, in third place (20.2 per cent) those who work in textile industries.

As for the cities where they work, 32 per cent of the graduates come from North Jakarta, followed by those (29.8 per cent) from Surabaya in second place and, in third place, those from Bandung (27.6 per cent). As for the higher education institutions from which they graduated, the largest group (15.8 per cent) comes from the University of Gadjah Mada in Yogyakarta. The second largest group (14.9 %) is from those who studied at the Institute of Technology Bandung, and in third place (11.4 per cent) are those who graduated from the University of Padjadjaran Bandung. It is worth noting, however, that about a quarter of the graduates did not state precisely where they had studied. Some of the latter group might have finished their studies outside the twelve universities involved in this study, or in state or private higher education institutions, in the region of Java or outside Java, and some of them might have graduated from universities abroad.

On graduates' fields of specialisation, the largest group (38.2 per cent) is engineering, followed by economics in second place (19.7 per cent). This is easy to understand because the kinds of industries in which the graduates are working are manufacturing industries, and no service industries are included in the study. 44.7 per cent of the graduates are over 35 years of age. As for the sex of the graduates, the number of male graduates (82.5 per cent) is almost five times that of the female graduates (17.1 per cent). It seems that the proportion of the number of female graduates working in industries is smaller than that of female graduates studying in universities.

Ethnically, the largest group of graduates consists of those whose parents are native. However, the proportion of those whose parents are non-native is largely of Chinese origins.

The highest level of education of 49.6 per cent of the graduates' mothers is primary education, followed by junior secondary education (23.7 per cent), and senior secondary education (11.4 per cent). About one tenth of the graduates' mothers have no education at all. This clearly indicates that almost all the graduates are better and higher educated than their mothers. As for the education of the graduates' fathers, the largest group (30.3 per cent) completed primary education, followed by junior secondary (28.1 per cent) and senior secondary (24.1 per cent) education. This pattern is similar to that of the graduates' mothers.

Similarly to the students, most of the graduates (68.4 per cent) had their fathers as their guardians when studying at higher education institutions. In second place are those whose guardians were their uncles (8.8 per cent), although this latter group constitutes only one eighth of the former. In third place (7.5 per cent) are those whose guardians were their brothers or sisters and, in fourth place (7 per cent) are those who had their mothers as their guardians.

Most of the graduates (70.6 per cent) are married. Approximately a quarter of them are unmarried. The highest academic qualification of the graduates are mostly (88.2 per cent) Stratum-1 (Masters' degree), or "Sarjana", as it is called in the Indonesian language. As a matter of fact, some of the graduates have higher academic qualifications, but the proportion of this group is too small. The highest academic qualification of the graduates' spouses are mostly senior high, followed by Bachelors' Degree in second place, and "Masters" in third place.

3. Employer sample

The employers' characteristics are identical to those of the employers' industries.

32 per cent of the industries come from North Jakarta, followed by those (26.4 per cent) from Bandung in second place, and Surabaya in third place (23.2 per cent). The largest group (31.2 per cent) of the industries are equipment industries, followed by textile industries (24 per cent) in second place, and chemicals industries (16 per cent) in third place. The products of the industries have many different kinds of markets, at national, local and, in a few cases, international levels. The industries also have various kinds of autonomy. 32 per cent of them are autonomous, followed by headquarters industries (19.2 per cent) in second place, and, in third place are industries belonging to a particular group (16.8 per cent). Legally speaking, 44.8 per cent of the industries constitute partnerships, followed by limited companies (32.8 per cent) in second place. Of all the industries involved in this study, 42 per cent have their headquarters in Jakarta, and some 38 per cent have their headquarters in other cities. There was a large number of non-responses (19.2 per cent) on this question.

Finally, it is worth noting that almost half of the total industries have a continuous method of operation.

CHAPTER VI

STUDENTS' PERCEPTIONS AND EXPECTATIONS

1. Aspiration to pursue higher education

The three most popular factors inducing students to study in higher education are usually, from the most popular to the least popular, as follows:

(a) specific professional qualification wanted (37.6 per cent);

(b) better employment opportunities for qualified professionals (31.6 per cent);

(c) to make oneself available for manpower needs (16.3 per cent).

The students could vote for each of the five factors (see Student Question 21). It is obvious that the choice indicates the importance of economic considerations for study in higher education institutions. Study in higher education is perceived by most students as a means to be followed to get satisfactory jobs and respected professions in society, and through that, good economic rewards. In other words, most students perceive that study in higher education is a necessary factor to obtaining good employment in society.

Further analysis indicates that aspiration to pursue higher education as a variable in this research varies with other variables such as age, sex and number of children. The conclusions derived after analysing the relationship among the variables are as follows:

The factor "specific professional qualification wanted" will most probably be chosen by students who are relatively young, male and who are not yet married or, if they are married, have no children. The factor "better employment opportunities for qualified professionals" will most likely be chosen by students who are relatively older than the previous students, male or female, and have children already (they are married of course). Finally, the factor "to make oneself available for manpower needs" will quite often be chosen by students who are relatively of medium age, female and not yet married.

2. Early career information

More than three quarters of all the students (76.7 per cent) obtain early career information before continuing their study in higher education. It can also be said that the number of students obtaining early career information is relatively high. If the early career information really gives good and worthwhile advice and direction to the students, both on their educational career and on their employment career, that will certainly lessen the unnecessary wastage, both on the part of the students and on the part of higher education institutions.

The two most popular sources of career information among students are:

(a) parents, relatives and out-of-school friends (this answer has been chosen by 48.4 per cent of the students); and

(b) general information sources, books, newspapers (this answer has been chosen by 22.6 per cent of the students).

Very few of the students have utilised the Ministry of Manpower and Transmigration as their source of early career information. Principals and careers masters are not well utilised, either. It seems that the Ministry of Manpower and Transmigration, principals and careers masters (guidance and counselling) are not yet functional as sources of early career information. If they were functional, more students would have gone to them to get career information and advice before studying in higher education. Another finding: although most students have utilised parents, relatives and friends, this particular source of early career information has often been chosen by female rather than male students.

3. Mobility in study

About one tenth of the students changed their fields of study. It can be concluded therefore that change of study does exist and is unavoidable. Further examination of data reveals that 27.7 per cent of the changes of study are due to the fact that students did not like what they were doing in the past. The second most important reason for changes of study (21.4 per cent) is that students obtain better information on career possibilities afterwards.

From these findings, it is obvious that early career information was not readily available. If better early career information had been available, the number of students having changed their fields of study might have been much smaller.

From the findings of mobility in study, it can be concluded that the older the students, the more likely it is that they change their fields of study. The main reason for the change of study is that students do not like what they are doing. Nevertheless, the reason will be more often chosen by female students than by male students. The main reason normally chosen by male students is that they get better information on career possibilities later on. Financial reasons and academic unsuitability were not important reasons for such changes.

4. Degree of satisfaction with education

The fact that some of the students have changed their fields of study and that the main reason for the change of study is that students did not like what they were doing, clearly indicates that, in higher education institutions, some students do have the feeling of dissatisfaction towards their study. Students might like the fields in which they are studying, but still they may not be satisfied with their studies in higher education due to their lecturers' methods of teaching, the content of their study or even due to lack of interaction among students and lecturers.

It turns out that most students like their higher education. Almost one third of the students like it very much, and less than two out of one hundred students dislike their education. This finding is, of course, encouraging, especially to those who manage higher education. If those students who like their education very much are combined with those who just like their education, their total number constitutes almost all of the students involved in this research. Those who like higher education very much are relatively rather old students, male, with native parents. It can also be concluded that the better students get early career information the more they like their education in higher education institutions.

5. Expectations in respect of work

Most students expect to work permanently in accordance with the fields in which they are studying in higher education. One tenth of the students do not wish to work permanently in accordance with their fields of study. When asked why they remain in their fields of study, the latter explain that their fields of study give them a wider choice of future careers.

From the findings, it is obvious that study in higher education is perceived to be a preparation for obtaining a permanent job in the future. More than half of the students expect to be permanently employed in the government sector. In second place are those expecting to be permanently employed in the national private sector, which constitutes one third of the first group. It is worth noting that those expecting to be self-employed are relatively few in number, approximately eight per cent of the first group.

Students wishing to be permanently employed in the government sector normally have the following characteristics: most of them expect to be permanently employed in accordance with the fields in which they are studying, are relatively rather old, native and live in urban areas. At the other end of the scale, students wishing to be permanently self-employed as entrepreneurs normally have the following characteristics: they expect to be employed in accordance with the fields in which they are studying, are relatively rather young, ethnically of Chinese origin, and live in both urban and rural areas.

6. Obtaining a better knowledge of work

Since education in higher education institutions is usually perceived as a preparation for a student's career after graduating from higher education, either in the government sector, private sector or self-employment, it is not uncommon that a student has a particular perception of how to obtain better knowledge of his future job.

In this connection, data from the study indicate that ways to obtain better knowledge of work chosen by the students are, in order of popularity, practical job experience during a study course in the first place, discussing with career teachers in the second place, discussing with workers from particular fields in the third place, reading career publications in the fourth place and, in the last place, personally getting information from prospective employers (see Table 1).

In this case it can be concluded that, in preparing his career after graduating from higher education, apart from his general education, a student also realises the importance of practical job experience as part of his preparation.

7. Work in rural areas

More than 80 per cent of the Indonesian population live in rural areas. It is therefore necessary to know how students could be induced to work in rural areas. After graduating from higher education, a student will be expected to become a high level personnel who will certainly have impact and influence on the development of rural areas if he, the student, is really prepared and willing to work in the rural areas.

According to the students involved in this study, factors inducing them to work in rural areas are: a post of greater responsibility in the first place, financial incentives in the second place, promotion prospects in the third place, cheap cost of living in the fourth place, and opportunity for a freer life in the fifth place. On the other hand, factors discouraging the students from taking a job in the rural areas are: communication and transportation difficulties in the first place, no scope of improving competence in the second place, possible delays in promotion in the third place, lack of tap water, electricity, etc. in the fourth place, belief that rural life is dull and slow in the fifth place, and finally, separation from friends and relatives.

From the findings on students' views of work in rural areas, it can be concluded that most students are actually interested and willing to work in rural areas. A post of greater responsibility, financial incentives and good promotion prospects can increase and motivate the students to work in rural areas. On the other hand, if there is no effort (especially on the part of the government) to solve problems related to communication and transportation difficulties, no scope of improving competence or shortening delays in promotion, it should not be surprising to anyone if the students were not interested or willing to work in rural areas (see Tables 2 and 3).

8. Occupational expectations

A student's aspiration or expectation to get a job in the labour market relates to a number of things. One of these is the sector he or she expects to work in permanently. Another thing is the degree of ease or difficulty in getting proper jobs after graduating from higher education.

The students' responses to relevant questions indicate that 43 per cent of them think it easy, 31 per cent think it rather difficult, and 10 per cent think it difficult, to obtain proper jobs after graduation. 15 per cent of the students do not know the answer to the question.

The findings also show that occupational expectations of students vary according to fields of study and higher education institutions. According to the fields of study or the faculties, those who think it easy to obtain proper jobs after graduation are mostly students in a. engineering, b. psychology, and c. economics. Those who think it difficult to obtain proper jobs after graduation are students of law, social sciences, and administration (see Table 4).

Let us now look at occupational expectations as seen from the universities where the students are studying. Those who think it easy to obtain proper jobs after graduation are in the following order: a. Institute of Agriculture Bogor (IPB); b. Institute of Technology Bandung (ITB); c. University of Airlangga in Surabaya (UNAIR); d. Institute of Technology Surabaya (ITS); e. University of Indonesia Jakarta (UI); f. University of Gadjah Mada Yogyakarta (UGM); g. University of Jenderal Soedirman Purwokerto (UNSOED); h. University of Deponegoro Semarang (UNDIP); i. University of Brawijaya Malang (UNIBRAW); j. University of Padjadjaran Bandung (UNPAD); k. University of Jember (UNEJ); l. State University of Surakarta (UNS) (see Table 5).

The conclusions which can be derived from the findings on occupational expectations are as follows: Students coming from a certain institute, in this case institute of agriculture or technology, feel sure they will obtain proper jobs easily after graduation. Students coming from a particularly small university which is still in the process of development, generally think it rather difficult to obtain proper jobs after graduation, although students coming from a big university and studying engineering or economics will think it easy to obtain proper jobs after graduation from higher education.

9. Important factors making jobs satisfactory and meeting career objectives

Some day the students studying in higher education will graduate and will become high level manpower in the labour market, where they, as any other manpower, will be expected to work as best they can, both qualitatively

and quantitatively. It is important, therefore, to understand which factors, as perceived by students, make jobs satisfactory as well as meet career objectives.

Three factors considered to be the most important by the students in making jobs satisfactory after graduation are:

(a) interesting work (score of 2.57 on a three point scale);

(b) helpful to others and society (score of 2.55 on a three point scale); and

(c) work requiring good mental capability (score of 2.52 on a three point scale).

While three factors considered to be the least important in making jobs satisfactory are:

(a) no supervision (score of 1.50 on a three point scale);

(b) travel (score of 1.60 on a three point scale); and

(c) supervising others (score of 1.7 on a three point scale).

(See Table 6.)

Seen from the other aspect, i.e. meeting career objectives, the three factors considered to be the most important are:

(a) interesting work (score of 2.57 on a three point scale);

(b) good mental capability (score of 2.5 on a three point scale); and

(c) helpful to others and society (score of 2.5 on a three point scale).

While the three factors considered to be the least important in meeting these objectives are:

(a) no supervision (score of 1.51 on a three point scale);

(b) travel (score of 1.63 on a three point scale); and

(c) supervising others (score of 1.7 on a three point scale).

(See Table 7.)

It should be noted from the above findings that, among the three factors considered to be the most important, either in making jobs satisfactory or in meeting career objectives, there is the factor "helpful to others and society". This can be taken to mean that, basically, students have a strong social feeling and commitment, although some of them are studying in metropolitan cities. Meanwhile, from the students' perception of three factors which are considered to be the least important, there are two factors related to supervision, i.e. supervising others and no supervision. It seems that students expect to have a freer situation in the labour market, oriented towards products, not necessarily supervised or supervising others.

What is most interesting is the fact that these factors are highly correlated in meeting both career objectives and job satisfaction. Surprisingly, a "good income" is not regarded high on the scale.

CHAPTER VII

GRADUATES' PERCEPTION AND EXPECTATIONS

1. Aspiration to study in higher education

The three factors most popular among graduates for pursuing higher education are:

(a) specific professional qualification wanted (40.4 per cent of cases;

(b) better employment opportunities for qualified professionals (31.6 per cent of cases);

(c) to make oneself available for manpower needs (13.2 per cent of cases).

It is obvious that those factors, or even the order of the factors, are exactly the same as those inducing students to study in higher education. It is equally obvious, therefore, that the graduates' aspiration to study in higher education is also determined by social and economic considerations. Or, in other words, study in higher education is also perceived by graduates as a means to be followed to obtain satisfactory and respected jobs in society after graduation. "Study for its own sake" and "bursary incentives" were the reasons for only 7.5 per cent and 0.4 per cent of cases respectively (see Table 8).

2. Early occupational expectations

One of the objectives of this study is to know the pattern of early occupational expectations of the graduates. "Early occupational expectations" are the graduates' expectations to become specialists after graduation from senior high school. By knowing the pattern, it is expected to know how much suitability or unsuitability there has been between the expectations and achievements in the real lives of the graduates. It is also an attempt to know which factors influence the pattern of early occupational expectations.

The result of this study shows that the expectation to be an engineer was the most popular (37.3 per cent) among graduates when they graduated from senior high school. The expectation to be an economist was the second most popular (19.3 per cent) and, thirdly, to be a medical scientist (10.1 per cent).

It is also observed that social scientist, psychologist and agriculturist were the least aspired occupations, each with a score of 1.3 per cent.

The occupational expectation to be an engineer was chosen more frequently by those who are relatively young, living in the region of East Java, and working in ceramics industries in the municipality of Surabaya. The expectation to become an economist was more frequently chosen by graduates who are relatively old, living in the region of Central Java and now working in clothing industries in the city of Semarang. Finally, the expectation to become a medical scientist was more frequently chosen by those who are also relatively old, living in the region of Central Java and now working in food and drink industries in the city of Yogyakarta.

3. Mobility during study in higher education

Most graduates (87.8 per cent) did not change their fields of study when studying in higher education. Those who changed their fields of study constitute about one eleventh of the total graduates. This clearly indicates that most graduates, as most students, continued in their fields of study chosen for the first time after they graduated from senior high school.

Of those who changed their fields of study, the main reason most often mentioned was that they later obtained better information on career possibilities. Another reason frequently mentioned was that they did not like what they had done in the past. It is worth noting that approximately a quarter of the total graduates did not answer the question. It seems that they had no satisfactory career information.

It can be concluded here, therefore, that mobility during study was primarily due to the fact that there was no good and satisfactory career information. In the past, changes in fields of study were more frequent among male students than among female students, who had no guardian, and who had been admitted to higher education at a younger age.

4. Opinion about education

One of the objectives of the research on graduates was to know their degree of satisfaction with the education they received during their study in higher education.

It turns out that nine tenths (91.3 per cent) of the graduates surveyed stated that their education was at least useful for their present jobs (including those who stated that their education was very useful). None of the graduates say that their education in higher education is useless. Other data show that almost all (95.2 per cent) of the graduates state that the educational qualification they obtained from higher education was needed to get their present jobs. Some (43.9 per cent) even say that the educational qualification was very much needed. Those who say that their educational qualification was not needed is very small (2.2 per cent), five out of 222 graduates responding to the question.

Further analysis indicates the following facts: those who think that their educational qualification was very much needed to obtain their present jobs are those whose fields of specialisation are medical sciences in the first place, economics in the second place, and engineering in the third place. As for the cities where the graduates work, graduates working in Yogyakarta are in the first place, those working in North Jakarta are in the second place, and those working in Semarang are in the third place. If seen from the kinds of industries in which the graduates work, first of all are those working in chemicals industries, followed by those working in paper industries and those working in equipment, TV and radio industries.

5. First employment

The result of the study shows that almost one third (32 per cent) of the graduates obtained their first employment through personal contacts with the employers. This method of obtaining first employment, chosen by most of the graduates and probably also preferred by employers in their personnel recruitment, seems to be the cheapest and the least risky. Nevertheless, other methods of obtaining first employment were also utilised by some other graduates, namely newspaper advertisements, employment contracts, etc. The Ministry of Manpower was the least utilised source of employment (see Table 9). Realising the importance of first employment in the linkage between the system of higher education and the system of the world of work, it seems necessary to conduct special studies to understand more about these methods.

It can be concluded that personal contacts with the employers are the most popular method used to obtain first employment in the labour market. This method has more often been chosen by those who are relatively old and whose fields of specialisation are law or psychology.

6. Perception of early career information: ways of obtaining better knowledge on work

The information supplied by graduates on ways of obtaining a better knowledge on work is certainly useful, both to managers of higher education and to managers in industry. This is simply because the information is based on real facts experienced by the graduates.

The popularity of ways of obtaining a better knowledge on work, as perceived by graduates, is in the following order: practical job experience during the course of study in the first place (with a score of 1.53), followed by discussing with workers from particular fields (with a score of 1.80), discussing with career teacher (1.82), personally obtaining information from prospective employers (1.88) and, finally, reading careers publications (1.95). (See Table 10.) (1)

Although personal contacts with employers were deemed to be important to obtain graduates' first employment in the labour market, the best method to obtain better knowledge on work is, in their opinion, practical job experience.

7. Work in rural areas

Not only the views of the students (who are expected to become high-level manpower), but also the views of the graduates on work in rural areas should be noted. It is not unlikely that some graduates would be willing to work in rural areas if certain conditions are met. It is important, therefore, to know what the needs and requirements are. Factors inducing work in rural areas could be encouraged and, on the other hand, factors discouraging work in rural areas could be tackled, once they are identified.

The findings of the study clearly show some factors inducing graduates to work in rural areas. They are in the following order: a post of greater responsibility in the first place, followed by financial incentives and promotional prospects (all three of which have almost the same importance). Cheaper cost of living and the opportunity for a freer life are not considered very important inducing factors for work in rural areas - the same pattern of response as the students! Factors discouraging graduates from taking jobs in rural areas are in the following order: communication and transportation difficulties in the first place, followed by possible delays in promotion, no scope of improving competence, and lack of tap water, electricity, etc. Belief that rural life is dull and slow, and separation from friends and relatives also have some importance.

There is very little difference between students' views and graduates'

(1) Rank order: most important = 1, least important = 4

views on factors inducing or discouraging them from taking jobs in rural areas (See Tables 11 and 12).

8. Perception of current occupation

The importance of the graduates' views on current occupation is primarily because the degree of ease or difficulty in obtaining a proper job after graduation from higher education is based on their experiences.

The result of the study reveals that 63 per cent of the graduates state that their fellow students obtained jobs easily after graduation from higher education. 22 per cent of the graduates found it rather difficult to find a job, five per cent found it difficult, and nine per cent of the graduates did not respond. It can be noted that the students' perception in this respect is less optimistic than the graduates'. The students appear to be aware of the problem of employment for university graduates.

9. Opinions about work

The factors considered important in obtaining jobs are in the following order of importance :

(a) academic record (89.9 on a scale of 100);

(b) interview (88.1);

(c) aptitude tests (87.3); and

(d) past experience in a similar type of job (85.7).

Four other factors which are not considered important in obtaining jobs are: letters of recommendation, physical appearance, sex and marital status. Academic record is generally considered to be important by graduates who are relatively rather old.

Obtaining employment, especially the first employment, is really a complicated problem. Personal contacts with the employers are usually considered to be the most popular and the most important method of getting first jobs. However, the best way to obtain a better knowledge on work is through practical job experience during the course of study. Nevertheless, the academic record still has a role to play in obtaining the first employment. In other words, if somebody has sufficient practical job experience and the capability to make personal contacts with employers, but if he has no academic record, it might still be very difficult for him to get a particular job.

10. Perception of factors important in making jobs satisfactory and in meeting career objectives

If students (who have formally never had work experience in the labour market) have views on these factors, graduates certainly have views on these factors which, similar to other views, are also based upon real experiences in the world of work.

The three factors considered to be the most important in making jobs satisfactory are:

(a) interesting work (2.6 on a three point scale);

(b) good working conditions (2.49 on a three point scale);

(c) good income (2.44 on a three point scale).

While the three factors which are considered to be the least important in making jobs satisfactory are:

(a) travel (1.38);

(b) no supervision (1.44); and

(c) supervising others (1.55).

(See Table 14.)

Similar to what has been stated before concerning students' perceptions, the factors can function differently, i.e. meeting career objectives. According to the graduates involved in this study, three factors considered to be the most important in meeting career objectives are:

(a) interesting work (2.52 on a three point scale);

(b) work requiring good mental capability (2.43); and

(c) good working conditions(2.43).

While the three factors considered to be the least important are:

(a) travel (0.84);

(b) no supervision (1.53); and

(c) supervising others (1.59).

(See Table 15.)

It will be interesting to compare the students' perception of these factors with that of the graduates. On the factors considered to be the most important in making jobs satisfactory, as well as in meeting career objectives, both students and graduates are of the opinion that interesting work and work requiring good mental capability are very important factors. There are some factors, however, considered to be very important by students, but considered to be less important by graduates, such as helpfulness

to others and to society. On the reverse, there are factors considered very important by graduates but less important by students, such as good working conditions and good income. On factors considered the least important in making jobs satisfactory or in meeting career objectives, there is more similarity between students' and graduates' perceptions. Both students and graduates are of the opinion that factors related to supervision or travel are considered to be the least important, either in making jobs satisfactory or in meeting career objectives.

The findings show that there are some differences between students' perception and that of graduates on those factors considered to be the most important in making jobs satisfactory and in meeting career objectives. Students seem to be more idealist and place more emphasis on factors such as being helpful to others and to society, while graduates seem to be more practical and more realistic and place emphasis on factors such as good working conditions and good income.

11. Willingness to co-operate with higher education institutions

One method expected to be effective in improving the relationship between higher education and the world of work is to mobilise graduates to co-operate with higher education institutions. By so doing, it is expected that there will be closer links between higher education systems and society in general. Such links will certainly solidify the position of higher education, the development of which should also pay attention to the needs of industries, which are the backbone of national development.

Our survey shows that most graduates are willing to co-operate with higher education institutions. Almost 80 per cent of the graduates are willing to provide information through questionnaires from time to time. The same number of graduates is also willing to attend some meetings. Almost 60 per cent of the graduates surveyed are prepared to become members of advisory groups of the institutes of higher education. The latter group of graduates is smaller in number than the previous two groups. This may be due to the fact that co-operation with higher education can be time-consuming. The graduates who are most willing to become members of advisory groups are those whose fields of specialisation are mathematics and natural sciences, economics and engineering. Those who are willing to fill out questionnaires from time to time are graduates from Yogyakarta, Surabaya, Semarang, Bandung

and North Jakarta, in that order. Those willing to fill out questionnaires from time to time are from chemicals industries, textile industries and equipment industries, in that order.

Among the graduates who are now working in various industries, those who are willing to co-operate are generally from cities where the influence of university life is rather strong. In cities where the influence of business and commerce are strong, the number of graduates willing to co-operate with higher education is smaller.

CHAPTER VIII

EMPLOYER PERCEPTION AND EXPECTATIONS

1. Correspondence between Academic and Vocational Performance

One problem of the research on enterprises is the fact that most industries involved in the study employ only four high-level employees graduating from higher education institutions. It is easy to understand, therefore, that some of the employers do not have real experience of working with all levels of graduates from higher education. This is the reason why some employers did not respond to the question on correspondence between academic and vocational performance. 34 per cent of the employers did not answer the question on correspondence between academic and vocational performance of the graduates with stratum-1 ("Sarjana") qualifications. 78 per cent of the employers did not respond to the question on correspondence between academic and vocational performance of graduates with stratum-2 and stratum-3 ("Pasca Sarjana" and "Doktor") qualifications. However, among the employers giving responses, most of them explain that there are medium and high correspondence between academic and vocational performances of graduates from higher education now working in industry.

2. Opinions about higher institutions

The relationship between higher education and industry can be improved upon in either of the following ways: by adjusting the development programmes of higher education to the needs of industry, or by adjusting the development of industry to the implementation of higher education development policy. According to the employers involved in this study, there are a number of ways by which higher education institutions can become more concerned about the needs of the industries by asking for their co-operation and involvement. These ways are, in order of popularity, as follows:

(a) development of new training programmes;

(b) carrying out research programmes related to the employers' organisations; and

(c) formulating higher education curricula.

(See Table 16.)

The choice of the three ways, especially the choice of the first one, clearly indicates that there are expectations on the part of the employers concerning development programmes of higher education. The employers would like higher education to not only give emphasis to the development of academic programmes, but also to provide practical training programmes directly related to the needs of industry. It seems that the employers are also doubtful that their involvement in choosing the method of instruction is an effective way of improving the relation between higher education and industry.

3. Recruitment practices

Although most industries do not employ many graduates from higher education, they still have some ideas as to how to recruit employees graduating from higher education. The result of this study indicates that the most popular method among the employers is personal contacts, followed by newspaper advertisements. Those utilising official institutions such as the Ministry of Manpower and Transmigration or higher education institution authorities are very few. These findings clearly show that the first considerations of recruitment are costs, which should be low. In addition, official institutions are not yet sufficiently functional to be good and reliable sources of recruitment. These responses confirm the statement of the graduates. Personal contacts, as a means of recruitment, are most popular among employers whose industries are establishments belonging to a group, and are least popular among employers which are headquarters. On the other hand, newspaper advertisements are most popular among employers which are headquarters, and least popular among employers whose industries are establishments belonging to a group (see Table 17).

4. Perception of the importance of some factors in selecting employees

Since, in most cases, employers are decision-makers in many matters related to recruitment practices, including the recruitment of employees graduating from higher education, it is important to understand their views on which factors they consider important in selecting employees with higher education qualifications.

Four factors considered important in the selection of graduates from higher education are:

(a) past experience in similar type of job (76.0 per cent);

(b) interview (73.6 per cent);

(c) aptitude tests (67.2 per cent);

(d) academic record (65.6 per cent);

Four other factors considered to be unimportant are;

(a) letters of recommendation (46.4 per cent);

(b) sex (41.6 per cent);

(c) physical appearance (32.8 per cent);

(d) marital status (18.4 per cent).

(See Table 17.)

From the findings, it is clear that employers' perceptions on factors considered to be unimportant is almost the same as those of the graduates. However, there are some differences between the opinions of the employers and those of the graduates on factors considered to be important, except on one factor only, i.e. the interview. In selecting their employees, the first consideration for the employers is past experience in a similar type of job. To obtain a first employment, according to the graduates, the first consideration should be academic records. Past experience in a similar type of job is most popular among industries whose products have a national market. The interview is most popular among industries of medium size. Aptitude tests are most popular among food and drink industries, and also among chemicals industries.

5. Difficulties in formulating job descriptions

Having understood the factors considered important in selecting employees, the labour market characteristics are now automatically clearer. Also important in understanding the labour market characteristics are the difficulties faced by employers in formulating job descriptions related to the selection of employees - in this case, those graduating from higher education.

The difficulties generally encountered by employers are in the following order:

(a) the graduates do not have the type of training the employers would like them to have (22.9 per cent);

(b) good performance in academic life does not necessarily mean better job performance (20.6 per cent);

(c) the jobs are too complex for precise specification of educational qualification (19.6 per cent).

(See Table 20.)

Employers whose industries have national marketing are usually of the opinion that the graduates do not have the training required by the employers. These employers are also of the opinion that jobs are too complex for precise specification of educational qualification. Another group of employers whose industries have an international market, generally think that a good performance in academic life does not necessarily mean better job performance.

It seems that the employers feel strongly that the world of work in general, and industries in particular, need more practical training, which is not provided by higher education. In addition, jobs in the world of work in general, and in industry in particular, are too complex for precise specifications of educational qualifications. This kind of opinion is generally expressed by employers whose industries are large in size, and the products of the industries have at least a national market.

6. Opinions on factors important in meeting employees' needs

Factors considered important by employers in satisfying employees are:

(a) work needing good mental capability (2.25 on a three point scale);

(b) good income (2.20); and

(c) good working conditions and a proper attitude towards work (2.18). (The last two factors under (c) have the same score.)

It is obvious here that there are some differences between employers' and graduates' opinions on factors considered to be important in making jobs satisfactory. In this case, employers place more emphasis on good mental capability, while graduates place more emphasis on interesting work. It is also worth noting that there are some differences in the employers' and students' perceptions of the factors considered important in making jobs satisfactory. One of the factors considered important by the students, i.e. helpful to others and to society, is considered to be unimportant by the employers.

Meanwhile factors considered to be important by employers in meeting the career objectives of the employees are:

(a) work needing good mental capability (2.25 on a three point scale);

(b) good income (2.18) ;

(c) interesting work, and also good working conditions (both scoring 2.16).

There are similarities between employers' opinions and those of graduates on these factors. But compared with those of the students, the employers' opinions are basically different. In order to meet the career objectives of the employees, the factors considered important by the employers are more concerned with mental capability and work.

A good income, as an important factor both in making jobs satisfactory and in meeting career objectives of the employees, is most popular among employers from the cities of Semarang and Yogyakarta. Good working conditions as an important factor in making jobs satisfactory is most popular among employers whose industries are of medium and small sizes. A proper attitude towards work as an important factor in making jobs satisfactory for the employees is most popular among employers in the chemicals industries.

Finally, the factors considered unimportant in making jobs satisfactory for the employees are; travel, no supervision, helpful to others and to society, supervising others and further studies. And the factors considered to be unimportant by employers in meeting career objectives are; travel, no supervision and supervising others.

The employers' opinions on factors considered to be very important in making jobs satisfactory, as well as in meeting career objectives, place more emphasis on work and mental capability. This might be closely related to the employers' interests and concerns. Employers would normally like to see their industries growing and developing and producing the best possible results - qualitatively, quantitatively and commercially. The graduates' opinions, on the other hand, place more emphasis on things related to work. This might be due to the fact that the primary concerns and interests of the graduates are to get maximum satisfaction from their jobs. While the students' views on those factors, apart from giving weight to work, also place more emphasis on the benefits produced by their jobs, not only for themselves but also for others and for society. It is obvious that the students' views on those factors, compared with those of the other two groups, are definitely more idealistic and contain values worth defending.

7. In-service training

The most popular form (38.6 per cent) of in-service training among employers is training conducted in their industries. Another popular form of in-service training is sending staff away from their organisations on a part-time basis (35.7 per cent) and, thirdly, sending staff away from their organisations on a full-time basis (25.7 per cent). The first form of in-service training, i.e. training conducted within the employers' industries, is most popular among industries in the city of Surabaya. The second form of in-service training, i.e. sending staff away from the industries on a part-time basis, is most popular among industries in North Jakarta. While the third form of in-service training, i.e. sending staff away from the industries on a full-time basis, is most popular among industries in the city of Bandung. Seen from the legal status of the industries, the first form is the most popular among domestic capital, the second among co-operatives, and the third among multi-nationals.

It can therefore be concluded that there is a strong tendency for the domestic capital industries in Surabaya to prefer the first form of training, the co-operative industries in North Jakarta tc prefer the second and the multi-national industries in Bandung to prefer the third.

CHAPTER IX

SUMMARY OF FINDINGS AND IMPLICATIONS FOR PLANNING

The findings can be summarised as follows:

1. Higher education has been perceived as a means to obtain proper jobs in society. Before continuing their studies in higher education, students usually obtain early career information from informal sources, especially from parents, relatives and out-of-school friends. The institutional mechanism is inadequate.
2. Those studying in higher education do not generally change their fields of study. Those who changed their fields of study did so because they had not received good and qualified career information. Education and training in higher education are generally considered to be satisfactory.
3. Those studying in higher education generally expect to be permanently employed in accordance with the fields in which they are studying. The primary factor inducing graduates to work in rural areas is a post of greater responsibility. Personal contacts are the most popular method of obtaining first employment, as well as of selecting employees. Practical experience is an important factor in the preparation of a career in the world of work.
4. Education and training in higher education are generally considered useful for performing the tasks on-the-job. As far as factors considered important in making jobs satisfactory and in meeting career objectives of the employees are concerned, there are similarities between the opinions of the students and those of the graduates, and there are also similarities between the opinions of the graduates and those of the employers, but there are differences of opinion between the students' and the employers' opinions.

The findings also reveal a number of negative factors in the development of higher education:

5. Many students from state universities and institutes expect to be employed in the government sector, and not in the private sector as entrepreneurs.

6. It is more difficult for older graduates to obtain proper jobs after graduation from higher education.

7. The link between higher education and the world of work not only exists but also constitutes a continuum containing the following four identified problem areas:

   (a) Problem area one, related to aspiration to study in higher education;

   (b) Problem area two, related to facts on what is happening in higher education;

   (c) Problem area three, related to aspiration for work after graduation from higher education;

   (d) Problem area four, related to facts on what is happening in the world of work.

Based upon the findings elaborated upon above, the following are some suggestions for policy formulation:

1. Employability of higher education graduates

It is suggested that institutions such as the Directorate General for Higher Education (DJPT), the Office of Educational and Cultural Research and Development (BP3K), and even the Ministry of Education and Culture, as thinkers and managers of higher education institutions in Indonesia, utilise all information gathered from students, graduates and employers as a basis for formulating the policy for higher education development in the future. What is meant by "policy for higher education development in the future" here is especially efforts which are systematically and operationally aimed at making higher education provide the best possible preparation for its graduates to work productively in the society, and also efforts aimed at giving the world of work as much benefit as possible from higher education graduates. In essence, the management and development of higher education in the future should relate to the efforts to improve quality, equality, relevance, effectiveness and efficiency, with the employability of the graduates. In order to achieve this objective, it goes without saying that the Ministry of Education and Culture should work much more closely with other Ministries and institutions, especially the Ministry of Manpower.

2. The improvement of career information and employment

It is suggested that all parties and institutions concerned within the Republic should:

   (a) develop sound career information, both educational career and employment career, and also functionalise a number of institutions, particularly the Ministry of Manpower, as official sources of career information which are always ready with reliable and up-to-date information;

   (b) encourage the creation of more employment, both in the government and particularly in the private sector. At the same time, it is necessary to create a more favourable climate in which all kinds

of jobs are given the same treatment and respect. Jobs in the government sector should not be treated as more important than those in the private sector. The main objetive of the creation of more employment and a more favourable climate is to give everyone the widest possible opportunity, including those graduating from higher education, who should obtain a job easily and fairly. If this is achieved, everyone will work peacefully and securely and will try to perform to the best of his ability, both for himself and for the society in which he lives.

3. Study on the link between the higher education system and the world of work

As can be seen from the continuum connecting the system of higher education and the world of work, there are four problem areas, each containing various kinds of factors or aspects. It is obvious that the link between the higher education system and the world of work is rather complicated. The complexity of the link will always change, grow and develop, and this is simply because the perception and expectations of students, graduates and employers always change, grow and develop, too.

Realising the complexity and importance of the link, it is suggested here that this study be followed through by conducting further more in-depth study on the link. If possible, the study should be enlarged, too, to cover not only the Java region, but also the whole of Indonesia; not only state universities and institutes, but also private ones; not only students and graduates from the stratum-1 programme, but also students and graduates from all degree and non-degree programmes; not only those graduating from higher education, but also those dropping out of the higher education system; not only involving employers from manufacturing industries, but also employers from service industries.

The suggested follow-up study should be carried out by one or more institutions at national level, and, if necessary, even mobilising the relevant international co-operation. Such a follow-up study should involve the BP3K and the DJPJ of the Ministry of Education and Culture, and the R and D Office of the Ministry of Manpower.

APPENDICES

A. STUDENT QUESTIONNAIRE

B. GRADUATE QUESTIONNAIRE

C. EMPLOYER QUESTIONNAIRE

D. STATISTICAL TABLES

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APPENDIX A

STUDENT QUESTIONNAIRE

(To be completed based on the answers of students of state universities in Jawa, final grade, all faculties except education and pedagogy)

All answers are to be treated confidential.

Name of Student : .....

Address : (A) Now .....
.....
.....
(B) Next Year .....
.....
.....

I. Name and signature of field worker:
.....
.....
.....

II. Place and date of field work:
.....
.....
.....

III. Name and signature of coordinator:
.....
.....
.....

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January 1980

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A. Personal Characteristics

1. What is your age?

(a) Less than 25 years ..... ( )
(b) 25 - 29 years ..... ( )
(c) 30 - 35 years ..... ( )
(d) More than 35 years ..... ( )

2. Give your date of birth, if possible:

..... 19....

3. Sex: (a) Male ..... ( )
(b) Female..... ( )

B. Community Characteristics

4. Ethnic origin of parents:

Mother

(a) Native (Specify)

..... ( )

(b) Non native (Specify)

..... ( )

Father

(a) Native (Specify)

..... ( )

(b) Non native (Specify)

..... ( )

5. Where were you born?

(a) Jakarta ..... ( )
(b) West Java..... ( )
(c) Central Java ..... ( )
(d) East Java ..... ( )
(e) Yogyakarta..... ( )
(f) Others (Specify)

..... ( )

6. Your permanent residence at present is :

(a) Urban area ..... ( )
(b) Rural area ..... ( )

C. Household Characteristics

7. What is the highest level of education which your parents have?

	Mother
(a) None	( )
(b) Primary School	( )
(c) Junior Secondary	( )
(d) Senior Secondary	( )
(e) Bachelor	( )
(f) Stratum- 1	( )
(g) Stratum- 2	( )
(h) Stratum- 3 (Doctor)	( )

	Father
(a) None	( )
(b) Primary School	( )
(c) Junior Secondary	( )
(d) Senior Secondary	( )
(e) Bachelor	( )
(f) Stratum- 1	( )
(g) Stratum- 2	( )
(h) Stratum- 3(Doctor)	( )

8. Your guardian is:

(a) Your father ..... ( )
(b) Your mother ..... ( )
(c) Another relative (Specify)
..... ( )
(d) None ..... ( )

If your answer is (a) or (b), you can directly answer the next question.

If your answer is (c), what is the highest level of education which your guardian has?

(a) None ..... ( )
(b) Primary School ..... ( )
(c) Junior Secondary ..... ( )
(d) Senior Secondary ..... ( )
(e) Bachelor ..... ( )
(f) Stratum- 1 ..... ( )
(g) Stratum- 2 ..... ( )

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(h) Stratum- 3 (Doctor) ..... ( )

9. Your guardian's occupation is (Please consult Appendix A):

(a) Professional, technical and related ..... ( )

(b) Managerial and administrative ..... ( )

(c) Clerical and related ..... ( )

(d) Sales work ..... ( )

(e) Service work..... ( )

(f) Agricultural, animal husbandry, forestry, fishery ..... ( )

(g) Production and related ..... ( )

(h) Unemployed ..... ( )

(i) Self-employed ..... ( )

(j) Not classifiable ..... ( )

10. What is your guardian's approximate monthly income (Before deductions)?

(a) Less than Rp. 25,000 ..... (

(b) Rp. 25,000 - Rp.49,000 ..... (

(c) Rp. 50,000 - Rp.99,000 ..... (

(d) Rp.100,000 - Rp.200,000 ..... (

(e) More than Rp. 200,000 ..... (

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11. Specify the income, if possible : .....

12. Did you attend Senior Secondary School in Indonesia?

(a) Yes ..... ( )

(b) No ..... ( )

13. Name of last Senior Secondary School attended:

.....

14. Last year of Senior Secondary School attended:

..... 19 ....

D. Early Career Information

15. Did you get any information on career possibilities before you applied for higher education?

(a) Yes ..... ( )

(b) No ..... ( )

16. If "yes", you got it from (Choose the most important one):

(a) Ministry of Manpower and Transmigration ..... ( )

(b) Principal ..... ( )

(c) Career Master (Guidance and Counselling)..... ( )

(d) Other staff of your school you attended..... ( )

(e) Parents, relatives and out-of-school friends. ( )

(f) School friends .....48..... ( )

(g) General information sources, books, newspapers,..( )

(h) Others (Specify) .....( )

17. The information or advice you got was:

(a) Very satisfactory .....( )

(b) Satisfactory .....( )

(c) Not satisfactory .....( )

E. Occupation Desired at End of Secondary School

18. When you completed your secondary education you wanted to be :

(a) Mathematician or Natural Scientist ..... ( )

(b) Social Scientist ..... ( )

(c) Psychologist ..... ( )

(d) Medical Scientist ..... ( )

(e) Engineer ..... ( )

(f) Agriculturist ..... ( )

(g) Economist ..... ( )

(h) Lawyer ..... ( )

(i) Humanistic professional ..... ( )

(j) Administrator ..... ( )

(k) Other (Specify) ..... ( )

F. Adult Home Characteristics

19. Are you married?

(a) Yes ..... ( )

(b) No ..... ( )

(c) Divorced ..... ( )

20. How many children do you have?

.....

G. Educational Career Decision

21. Why did you take university study? (Choose the most important one)

(a) Wanted specific professional qualification .... ( )

(b) Bursary incentives ..... ( )

(c) Desire for study for its own sake ..... ( )

(d) To make yourself available for manpower needs.. ( )

(e) Better employment opportunities for qualified professionals ..... ( )

(f) Other (Specify) ..... ( )

22. Was your present course of study your first choice?

(a) Yes ..... ( )

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(b) No ..... ( )

23. Have you ever changed your field of study during your study at higher education?

(a) Yes ..... ( )

(b) No ..... ( )

If "yes", indicate the most important reason for the most recent change:

(a) I did not have enough money ..... ( )

(b) My family wanted me to do something else ... ( )

(c) I later got better information on career possibilities ..... ( )

(d) Someone in my family died, my family moved, etc. ..... ( )

(e) My grades were not good enough ..... ( )

(f) I did not like what I was doing ..... ( )

(g) Other reason (Specify)

..... ( )

24. If more detailed occupational guidance had been made available to you in the past, would you have been willing to change your field of study?

(a) Yes ..... ( )

(b) No ..... ( )

(c) No opinion ..... ( )

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II. Current Employment Context

25. Are you employed at present?

(a) Yes .....Full time ..... ( )

.....Part time ..... ( )

(b) No ..... ( )

(c) Other (Specify) ..... ( )

26. Approximately how much do you earn per month when working? .....

I. Current Educational Context

27. Your faculty or field of study is:

(a) Mathematics or Natural Sciences ..... ( )

(b) Social Sciences ..... ( )

(c) Medical Sciences ..... ( )

(d) Engineering ..... ( )

(e) Agriculture ..... ( )

(f) Agriculture ..... ( )
(g) Economics ..... ( )
(h) Law ..... ( )
(i) Arts and Philosophy ..... ( )
(j) Administration ..... ( )
(k) Other (Specify) ..... ( )

28. How many years have you been studying on your present course? .....

29. Name of the university you are now attending is: .....

30. What is the main source of finance of your present education?

(a) Government bursary ..... ( )
(b) Non-government bursary ..... ( )
(c) Family ..... ( )
(d) Own effort (employment, savings) ..... ( )
(e) Other (Specify) ..... ( )

31. Are you a boarding student?

(a) Yes ..... ( )
(b) No ..... ( )

J. Higher Edication Institution Seeks Cooperation in Career Information

32. Does the Institution you are studying now seek cooperation of government, industry and business in getting specialists to inform students about careers and employment opportunities?

(a) Yes ..... ( )
(b) No ..... ( )
(c) No opinion ..... ( )

33. Dou you like the course you are studying now?

(a) Very much ..... ( )
(b) Reasonably ..... ( )
(c) Not at all ..... ( )

34. Do you think your secondary education was adequate background for your present course of study?

(a) Very adequate ..... ( )
(b) Adequate ..... ( )
(c) Inadequate ..... ( )

35. Do you expect to be permanently employed in your field of study?

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(a) Yes ..... ( )

(b) No ..... ( )

If "No", why do you still remain in this field of study? (Choose the most important one)

(a) The field gives me good career preparation .... ( )

(b) I just enjoy the field ..... ( )

(c) This field gives me a wider choice of future careers ..... ( )

(d) I am bonded to the field ..... ( )

(e) Other (Specify) ..... ( )

L. Opinions about Career Information

36. Should your institution take any interest in the employment of its graduates?

(a) Yes ..... ( )

(b) No ..... ( )

(c) No opinion ..... ( )

37. The following list gives five ways of obtaining better knowledge on conditions of work, promotion prospects, etc. Please rate them in order of preference (1 = most preferred, 4 = least preferred)

	1	2	3	4
(a) Practical job experience during a study course	( )	( )	( )	( )
(b) Personally getting information from prospective employers.....	( )	( )	( )	( )
(c) Reading Career Publications..	( )	( )	( )	( )
(d) Discussing with workers from particular field.	( )	( )	( )	( )
(e) Discussing with career teacher	( )	( )	( )	( )

M. Attitudes towards work in Rural Areas

38. What factors might induce you to work in rural areas (Please indicate how important you think each of the factors is):

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	Very important	Important	Not important
(a) Financial incentives.....	( )	( )	( )
(b) Promotion prospects	( )	( )	( )
(c) A post of greater responsibility.....	( )	( )	( )
(d) Opportunity for a freer life.....	( )	( )	( )
(e) Cheap cost of living	( )	( )	( )
(f) Another reason(Specify)....	( )	( )	( )

39. What factors might discourage you from taking a job in the rural areas? (Please indicate the importance of each of these factors):

	Very important	Important	Not important
(a) Lack of tap water, electricity, etc.	( )	( )	( )
(b)Communication and transportation difficulties....	( )	( )	( )
(c) Separation from friends and relatives	( )	( )	( )
(d) Belief that rural life is dull and slow.....	( )	( )	( )
(e) No scope of improving competence	( )	( )	( )
(f) Possible delays in promotion.....	( )	( )	( )
(g) Another reason (Specify)..	( )	( )	( )

N. Opinions about work

40. How important do you think each of the following factors is towards making a job satisfactory after graduation from higher education?

	Very important	Important	Not important
(a) Interesting work	( )	( )	( )
(b) Use of special talent	( )	( )	( )
(c) Creative work	( )	( )	( )
(d) No supervision	( )	( )	( )
(e) Further studies.....	( )	( )	( )
(f) Improve competence	( )	( )	( )
(g) Helpful to others and society.....	( )	( )	( )
(h) Work with people	( )	( )	( )

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	Very important	Important	Not important
(i) Good income	( )	( )	( )
(j) Travel	( )	( )	( )
(k) Supervise others	( )	( )	( )
(l) Better prospects	( )	( )	( )
(m) Secure future	( )	( )	( )
(n) Time for family and hobbies	( )	( )	( )
(o) Use of skill learned in formal schooling	( )	( )	( )
(p) Good working conditions	( )	( )	( )
(q) Good supervisor	( )	( )	( )
(r) Good mental capability	( )	( )	( )
(s) Proper attitude toward work	( )	( )	( )
(t) Opportunity to be productive in work	( )	( )	( )

41. How important do you think each of those factors is in meeting career objectives after graduation from higher education?

	Very important	Important	Not important
(a) Interesting work	( )	( )	( )
(b) Use of special talent	( )	( )	( )
(c) Creative work	( )	( )	( )
(d) No supervision	( )	( )	( )
(e) Further studies	( )	( )	( )
(f) Improve competence	( )	( )	( )
(g) Helpful to others and society	( )	( )	( )
(h) Work with people	( )	( )	( )
(i) Good income	( )	( )	( )
(j) Travel	( )	( )	( )
(k) Supervise others	( )	( )	( )
(l) Better prospects	( )	( )	( )
(m) Secure future	( )	( )	( )
(n) Time for family and hobbies	( )	( )	( )
(o) Use of skill learned in formal schooling	( )	( )	( )
(p) Good working conditions	( )	( )	( )
(q) Good supervisor	( )	( )	( )
(r) Good mental capability	( )	( )	( )
(s) Proper attitude toward work	( )	( )	( )
(t) Opportunity to be productive in work	( )	( )	( )

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O. Current Occupational Expectations

42. Do you think most of your fellow-students get proper jobs easily after graduation?
    (a) Very easily ..... ( )
    (b) Easily ..... ( )
    (c) Rather difficult ..... ( )
    (d) Difficult ..... ( )
    (e) Very difficult ..... ( )
    (f) Do not know ..... ( )

43. When you have completed your higher education, do you intend to seek employment in your field of study?
    (a) Yes, permanently ..... ( )
    (b) Yes, but not permanently ..... ( )
    (c) No ..... ( )

44. In what sector do you expect to be permanently employed when you have completed your study?
    (a) Government sector ..... ( )
    (b) National private sector ..... ( )
    (c) Multi-national private sector (Joint-venture)..( )
    (d) Self-employed (family) ..... ( )

45. The job you expect to be permanently employed belongs to which industrial sector ? (See Appendix B) .....

46. The job belons to which occupational classification? (See Appendix A) .....

47. To what extent will the choice of career depend upon success in your present studies?
    (a) Much ..... ( )
    (b) Reasonably ..... ( )
    (c) Not at all ..... ( )

48. What do you expect to be earning per month when you have finished your study (before deductions, excluding inflation) ?
    (a) At the start of your career ..... Rp. .....
    (b) After about five years ..... Rp. .....
    (c) After about ten years ..... Rp. .....
    (d) Near retirement ..... Rp. .....

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I. OCCUPATIONAL CLASSIFICATION LIST

Code	Occupational Area
A 00	Unemployed
	Professional, Technical and Related Workers
A 01	Physical scientists and related workers.
A 02	Architects, engineers and related workers.
A 03	Aircraft and ships officers.
A 04	Life sciantists and related technicians.
A 05	Medical, dental, veterinary and related technicians.
A 06	Statisticians, mathematicians, system analysts and related technicians.
A 07	Economists.
A 08	Accountants.
A 09	Jurists, lawyers, judges.
A 10	Teachers.
A 11	Workers in religion (From the Ministry of Religious Affairs).
A 12	Authors, journalists and related workers.
A 13	Sculptors, painters, photographers and related creative artists.
A 14	Composers and performing artists.
A 15	Athletes, Sportsmen and related workers.
A 16	Professional, technical and related workers not classified elsewhere.
	Managerial and Administrative Workers
A 17	Legislative officials and government administrators.
A 18	Managers.
A 19	Government executive officials.
	Clerical and Related Workers
A 20	Clerical supervisors.

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A 21	Stenographers, typists and card and tape-punching machine operators.
A 22	Book-keepers, cashiers and related workers.
A 23	Computing machine operators.
A 24	Transport and communications supervisors.
A 25	Transport conductors.
A 26	Mail distribution clerks.
A 27	Telephone and telegraph operators.
A 28	Clerical and related workers not elsewhere classified.
	Sales Workers
A 29	Sales supervisors, technical salesmen, manufacturing agents, shop assistants etc.
	Service Workers
A 30	Cooks, domestic servants, waiters, bartenders, cleaners, hairdressers etc.
	Agricultural, animal husbandry, forestry workers and fishermen
A 31	Farm workers, forestry workers, charcoal burners, fishermen etc.
	Production and related workers, transport equipment operators and labourers
A 32	Production supervisors and general foremen, miners, tailors, machine tool operators, broadcasting station operators, cinema projectionists, plumbers, printers, photographers, painters, bricklayers, carpenters, construction workers, equipment operators, freight handlers, transport equipment operators, etc.
A 33	Undergoing further training
A 34	Self-employed

II. INDUSTRIAL CLASSIFICATION LIST

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Code	Industrial Area
B 00	Unemployed
B 01	Agriculture Field crops, orchards, cattle, poultry, forestry, erosion control, wildlife, fisheries, etc.
B 02	Mining Quarries, minerals, precious stones, fuel (coal), etc.
B 03	Manufacturing Food, beverages, tobacco, leather, timber, printing and publishing, chemicals, petroleum, rubber products, china, building materials, metals, other manufacturing industries, etc.
B 04	Construction Building, railway, road, airport, dam, constructions, mining works, cementation, construction of shafts, etc.
B 05	Electricity and Water Electric plants and grids, water supply plants, etc.
B 06	Trade Store and other distribution agencies, etc.
B 07	Financial Institutions and Insurance.
B 08	Real Estate
B 09	Transport and Communication Road, rail and air transport, boats, telecommunications, radio, TV, etc.
B 10	Government Administration
B 11	Community and Business Services Sanitation, social and related community services, education, medical and veterinary services, welfare, recreational and cultural services, police, fire, etc.
B 12	Hotels, Restaurants and Tourism

APPENDIX B

GRADUATE QUESTIONNAIRE

(To be completed based on the answers of graduates of universities, all faculties and now working in industries in Jawa)

All answers are to be treated confidential.

Name of graduate (If no objections) : .....

Address : (A) Now .....
.....
.....
(B) Next Year .....
.....
.....

I. Name and signature of field worker:
.....
.....
.....

II. Place and date of field work:
.....
.....
.....

III. Name and signature of coordinator:
.....
.....
.....

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A. Personal Characteristics

1. What is your age?

(a) Less than 25 years ..... ( )
(b) 25 -- 29 years ..... ( )
(c) 30 -- 35 years ..... ( )
(d) More than 35 years ..... ( )

2. Give your date of birth, if possible:

..... 19 .....

3. Sex : (a) Male ..... ( )
(b) Female ..... ( )

B. Community Characteristics

4. Ethnic origin of parents:

Mother

(a) Native (Specify) ..... ( )

(b) Non-native (Specify) ..... ( )

Father

(a) Native (Specify) ..... ( )

(b) Non-native (Specify) ..... ( )

5. Indicate the region you live now under (1) and the region you were born under (2):

	Live now (1)	Were born (2)
(a) Jakarta	( )	( )
(b) West Jawa	( )	( )
(c) Central Jawa	( )	( )
(d) East Jawa	( )	( )
(e) Other(Specify)	( )	( )

C. Childhood Home Characteristics

6. What is the highest level of education which your parents have?

Mother

(a) None ..... ( )
(b) Primary School ..... ( )
(c) Junior Secondary ..... ( )
(d) Senior Secondary ..... ( )
(e) Bachelor ..... ( )
(f) Stretum -- 1 ..... ( )

(g) Stratum -- 2 ..... ( )
(h) Stratum -- 3 (Doctor) ..... ( )

Father

(a) None ..... ( )
(b) Primary School ..... ( )
(c) Junior Secondary ..... ( )
(d) Senior Secondary ..... ( )
(e) Bachelor ..... ( )
(f) Stratum -- 1 ..... ( )
(g) Stratum -- 2 ..... ( )
(h) Stratum -- 3 (Doctor) ..... ( )

7. Who your guardian was when you were still a university student:

(a) Your father ..... ( )
(b) Your mother ..... ( )
(c) Another relative (Specify) ..... ( )
(d) None ..... ( )

If your answer is (a) or (b), you can directly answer the next question.

If your answer is (c), what is the highest level of education which your guardian has?

(a) None ..... ( )
(b) Primary School ..... ( )
(c) Junior Secondary ..... ( )
(d) Senior Secondary ..... ( )
(e) Bachelor ..... ( )
(f) Stratum -- 1 ..... ( )
(g) Stratum -- 2 ..... ( )
(h) Stratum -- 3 (Doctor) ..... ( )

8. Please indicate what your guardian's occupation was (Consult Appendix A):

(a) Professional, technical and related ..... ( )
(b) Managerial and administrative ..... ( )
(c) Clerical and related ..... ( )
(d) Sales work ..... ( )
(e) Service work ..... ( )
(f) Agricultural, animal husbandry, forestry, fishery ..... ( )
(g) Production and related ..... ( )
(h) Unemployed ..... ( )
(i) Self-employed ..... ( )

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(j) Not classifiable ..... ( )

9. What was your guardian's approximate monthly income when you were still a university student?

(a) Less than Rp. 25, 000 ..... ( )

(b) Rp. 25,000 -- Rp. 49,000 ..... ( )

(c) Rp. 35,000 -- Rp. 99,000 ..... ( )

(d) Rp.100,000 -- Rp.200,000 ..... ( )

(e) More than Rp. 200,000 ..... ( )

10. Specify the income, if possible : .....

D. Early occupational and educational expectations

11. Did you attend Senior Secondary School in Indonesia?

(a) Yes ..... ( )

(b) No ..... ( )

12. Name of last Senior Secondary School you attended:

.....

13. Last year at Senior Secondary School attended:

..... 19 ...

14. Completing Senior Secondary School, you wanted to be:

(a) Mathematician or Natural Scientist ..... ( )

(b) Social Scientist ..... ( )

(c) Psychologist ..... ( )

(d) Medical Scientist ..... ( )

(e) Engineer ..... ( )

(f) Agriculturist ..... ( )

(g) Economist ..... ( )

(h) Lawyer ..... ( )

(i) Humanistic professional ..... ( )

(j) Administrator ..... ( )

(k) Other (Specify) ..... ( )

15. Why did you continue your study at higher eduaction? (Choose the most important one)

(a) Wanted specific professional qualification ..... ( )

(b) Bursary incentives ..... ( )

(c) Desire for study for its own sake ..... ( )

(d) To make oneself available for manpower needs .... ( )

(e) Better employment opportunities for qualified professionals ..... ( )

(f) Other (Specify)

..... ( )

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E. Adult Home Characteristics

16. Are you married?
    (a) Yes ..... ( )
    (b) No ..... ( )
    (c) Divorced ..... ( )

17. If "Yes", what is the highest level of education your spouse has?
    (a) None ..... ( )
    (b) Primary School ..... ( )
    (c) Junior Secondary ..... ( )
    (d) Senior Secondary ..... ( )
    (e) Bachelor ..... ( )
    (f) Stratum -- 1 ..... ( )
    (g) Stratum -- 2 ..... ( )
    (h) Stratum -- 3 (Doctor) ..... ( )

F. Educational Characteristics at Higher Education

18. What is the highest academic qualification you hold?
    (a) Stratum -- 1 (E.g. Drs., S.Ek., S.H., Drs. M.Ed., Ir.) ..... ( )
    (b) Stratum -- 2 (E.g. M.A., M.Sc., M.Ed.) ..... ( )
    (c) Stratum -- 3 (E.g. Dr., Ph.D.) ..... ( )

19. Where did you get your highest academic qualification?
    .....

20. What is the name of the institution you obtained your highest academic qualification?
    .....

21. In what year were you admitted to be a student of the institution granting you the highest academic qualification?
    ..... 19 .....

22. In what year did you obtain your highest academic qualification? ..... 19 .....

23. Did you ever change your field of study during your higher education study?
    (a) Yes ..... ( )
    (b) No ..... ( )

24. If "Yes", indicate the most important reason of the most recent change:
    (a) I did not have enough money then ..... ( )
    (b) My family wanted me to do something else ..... ( )
    (c) I later got better information on career possibilities ..... ( )

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(d) Someone in my family died, my family moved, etc. ..... ( )

(e) My grades were not good enough ..... ( )

(f) I did not like what I was doing ..... ( )

(g) Other reason (Specify) ..... ( )

25. Which field did you specialize in for your highest qualification?

(a) Mathematics or Natural Sciences ..... ( )

(b) Social Sciences ..... ( )

(c) Psychology ..... ( )

(d) Medical Sciences (Health) ..... ( )

(e) Engineering ..... ( )

(f) Agriculture ..... ( )

(g) Economics ..... ( )

(h) Law ..... ( )

(i) Arts and Philosophy ..... ( )

(j) Administration ..... ( )

(k) Other (Specify) ..... ( )

26. What field is the most relevant to your present job?

(a) Mathematics or Natural Sciences ..... ( )

(b) Social Sciences ..... ( )

(c) Psychology ..... ( )

(d) Medical Sciences (Health) ..... ( )

(e) Engineering ..... ( )

(f) Agriculture ..... ( )

(g) Economics ..... ( )

(h) Law ..... ( )

(i) Arts and Philosophy ..... ( )

(j) Administration ..... ( )

(k) Other (Specify) ..... ( )

27. Did the university you attended last have an employment office? (a) Yes ..... ( )

(b) No ..... ( )

If not, according to your view, would it have been useful if there had been one?

(a) Yes ..... ( )

(b) No ..... ( )

(c) No opinion ..... ( )

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28. What was the main source of finance for your first study at higher education institution?
    (a) Government bursary ..... ( )
    (b) Non-government bursary ..... ( )
    (c) Family ..... ( )
    (d) Own effort (employment, savings) ..... ( )
    (e) Other (Specify) ..... ( )
29. Did you train to be a teacher?
    (a) Yes ..... ( )
    (b) No ..... ( )

G. Early Occupational Career

30. How did you get your first employment after graduation? (Choose the most important one?)
    (a) Through the university you graduated from ..... ( )
    (b) Ministry of Manpower and Transmigration ..... ( )
    (c) Newspaper advertisement ..... ( )
    (d) Personal contacts with the employers ..... ( )
    (e)Tied to the employment by binding ..... ( )
    (f) Another method (Specify)
    ..... ( )
31. How long did you have to wait before you were employed?
    ..... months
32. Did you ever change your job? (a) Yes..... ( )
    (b) No ..... ( )
33. If you changed your job, why did you do that? (Choose the most important one)
    (a) Better conditions of service ..... ( )
    (b) Better utilization of training ..... ( )
    (c) Better prospects for promotion ..... ( )
    (d) More suited to personal talents ..... ( )
    (e) Lost previous job ..... ( )
    (f) Did not get along with the people you were working with ..... ( )
    (g) Other reason (Specify)
    ..... ( )
34. List the occupation and industry you were employed. Start from the year after you graduated from the university (See Appendix A and Appendix B, and choose the most appropriate numbers):

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	Occupation	Industry
(a) January 19	A/ / /	B/ / /
(b) January 19	A/ / /	B/ / /
(c) January 19	A/ / /	B/ / /
(d) January 19	A/ / /	B/ / /
(e) January 19	A/ / /	B/ / /
(f) etc.	A/ / /	B/ / /

II. Current Occupational Career

35. In what sector are you working now?
    (a) Government sector ..... ( )
    (b) National private sector ..... ( )
    (c) Multi-national private sector ..... ( )
    (d) Self-employed (Family) ..... ( )
36. Your present job belongs to which industrial sector?
    (See Appendix B) .....
37. The job belongs to which occupational classification?
    (See Appendix A) .....
38. Do you think most of your fellow-students immediately got proper jobs easily after graduation?
    (a) Very easily ..... ( )
    (b) Easily ..... ( )
    (c) Rather difficult ..... ( )
    (d) Difficult ..... ( )
    (e) Very difficult ..... ( )
    (f) Do not know ..... ( )
39. Do you also teach, here in the industry you are working now or outside? (a) Yes ..... ( )
    (b) No ..... ( )
40. Approximately how many hours do you work per week?
    .....
41. What is your monthly gross salary at present?
    Rp. .....
42. What was your monthly gross salary when you got your first permanent job?
    Rp. .....

I. Opinions about Education

43. In your opinion, do you think the education you received was useful to the needs of your present job?
    (a) Very useful ..... ( )

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(b) Useful ..... ( )
(c) Average ..... ( )
(d) Useless ..... ( )

44. To what extent were your educational qualifications necessary for getting your present job?
(a) Very necessary ..... ( )
(b) Necessary ..... ( )
(c) Not necessary ..... ( )

45. How would you like the following arrangement of placement services for the employment of graduates? Choose the most important one:
(a) Placement office attached to each academic department or faculty ..... ( )
(b) One placement office for the whole university ..... ( )
(c) Placement office attached to the Ministry of Manpower and Transmigration ( )
(d) Placement office attached to each trade union ..... ( )
(e) No placement office at all ..... ( )
(f) Other arrangement (Specify) ..... ( )

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J. Opinions about career information

46. The following list gives five ways of obtaining better knowledge on conditions of work, promotion prospects, etc. Please rate them in order of preference (1= being the best, 4 = the least)

	1	2	3	4
(a) Practical job experience during the course of study (e.g.sandwich courses, vocational employment) ...	( )	( )	( )	( )
(b) Personally getting information from prospective employers	( )	( )	( )	( )
(c) Reading careers publications	( )	( )	( )	( )
(d) Discussing with workers from particular fields.....	( )	( )	( )	( )
(e) Discussing with career teacher	( )	( )	( )	( )

K. Attitudes toward Work in Rural Areas

47. Which of the following factors might induce you to work in rural areas. Please indicate the degree of importance:

	Very important	Important	Not important
(a) Financial incentives	( )	( )	( )
(b) Promotional prospects	( )	( )	( )
(c) A post of greater responsibility	( )	( )	( )
(d) Opportunity for freer life	( )	( )	( )
(e) Low cost of living	( )	( )	( )

48. Which of the following factors might discourage you from taking a job in the rural areas? Please indicate the importance of each of the factors:

	Very important	Important	Not important
(a) Lack of tap water, electricity, etc.	( )	( )	( )
(b) Communication and transportation difficulties	( )	( )	( )
(c) Separation from friends and relatives	( )	( )	( )
(d) Belief that rural life is dull and slow	( )	( )	( )
(e) No scope for improving competence	( )	( )	( )
(f) Possible delays in promotion	( )	( )	( )
(g) Other reason (Specify)	( )	( )	( )

L. Opinions about Work

49. How important do you consider each of the following factors had in getting your job?

	Very important	Important	Not Important
(a) Academic record	( )	( )	( )
(b) Aptitude tests	( )	( )	( )
(c) Interview	( )	( )	( )
(d) Past experience in a similar type of job	( )	( )	( )

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(e) Letters of recommendation ... ( ) ..... ( ) ..... ( )

(f) Physical appearance( ) ..... ( ) ..... ( )

(g) Other (Specify).....( ) ..... ( ) ..... ( )

50. To what extent did choice of career depend on success in your studies? (a) Very much ..... ( )
(b) Somewhat ..... ( )
(c) Not at all ..... ( )

51. In your opinion, how important each of the following factors is in making a job satisfactory:

	Very important	Important	Not important
(a) Interesting work.....	( )	( )	( )
(b) Use of special talent..	( )	( )	( )
(c) Creative work	( )	( )	( )
(d) No supervision	( )	( )	( )
(e) Further studies	( )	( )	( )
(f) Improve competence....	( )	( )	( )
(g) Helpful to others and society	( )	( )	( )
(h) Work with people	( )	( )	( )
(i) Good income	( )	( )	( )
(j) Travel	( )	( )	( )
(k) Supervise others	( )	( )	( )
(l) Better prospects	( )	( )	( )
(m) Secure future	( )	( )	( )
(n) Time for family and hobbies.....	( )	( )	( )
(o) Use of skill learned in formal schooling...	( )	( )	( )
(p) Good working conditions	( )	( )	( )
(q) Good supervisor	( )	( )	( )
(r) Good mental capability	( )	( )	( )
(s) Proper attitude toward work	( )	( )	( )
(t) Opportunity to be productive in work	( )	( )	( )

52. In your opinion, how important each of the following factors is in meeting career objectives:

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	Very important	Important	Not important
(a) Interesting work	( )	( )	( )
(b) Use of special talent	( )	( )	( )
(c) Creative work	( )	( )	( )
(d) No supervision	( )	( )	( )
(e) Further studies	( )	( )	( )
(f) Improve competence	( )	( )	( )
(g) Helpful to others and society	( )	( )	( )
(h) Work with people	( )	( )	( )
(i) Good income	( )	( )	( )
(j) Travel	( )	( )	( )
(k) Supervise others	( )	( )	( )
(l) Better prospects	( )	( )	( )
(n) Secure future	( )	( )	( )
(n) Time for family and hobbies	( )	( )	( )
(o) Use of skill learned in formal schooling	( )	( )	( )
(p) Good working conditions	( )	( )	( )
(r) Good mental capability	( )	( )	( )
(s) Proper attitude toward work	( )	( )	( )
(t) Opportunity to be productive in work	( )	( )	( )

M. Willingness to Cooperate with Higher Education Institution

53. If the higher education institution you attended would ask for your cooperation, would you be willing to cooperate within your time limits in the following areas?

	Yes	No	No opinion
(a) As a member of an advisory group	( )	( )	( )
(b) Filling out some questionnaires from time to time	( )	( )	( )
(c) Attending some meetings	( )	( )	( )

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I. OCCUPATIONAL CLASSIFICATION LIST

Code	Occupational Area
A 00	Unemployed
	Professional, Technical and Related Workers
A 01	Physical scientists and related workers.
A 02	Architects, engineers and related workers.
A 03	Aircraft and ships officers.
A 04	Life sciantists and related technicians.
A 05	Medical, dental, veterinary and related technicians.
A 06	Statisticians, mathematicians, system analysts and related technicians.
A 07	Economists.
A 08	Accountants.
A 09	Jurists, lawyers, judges.
A 10	Teachers.
A 11	Workers in religion (From the Ministry of Religious Affairs).
A 12	Authors, journalists and related workers.
A 13	Sculptors, painters, photographers and related creative artists.
A 14	Composers and performing artists.
A 15	Athletes, Sportsmen and related workers.
A 16	Professional, technical and related workers not classified elsewhere.
	Managerial and Administrative Workers
A 17	Legislative officials and government administrators.
A 18	Managers.
A 19	Government executive officials.
	Clerical and Related Workers
A 20	Clerical supervisors.

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A 21	Stenographers, typists and card and tape-punching machine operators.
A 22	Book-keepers, cashiers and related workers.
A 23	Computing machine operators.
A 24	Transport and communications supervisors.
A 25	Transport conductors.
A 26	Mail distribution clerks.
A 27	Telephone and telegraph operators.
A 28	Clerical and related workers not elsewhere classified.
	Sales Workers
A 29	Sales supervisors, technical salesmen, manufacturing agents, shop assistants etc.
	Service Workers
A 30	Cooks, domestic servants, waiters, bartenders, cleaners, hairdressers etc.
	Agricultural, animal husbandry, forestry workers and fishermen
A 31	Farm workers, forestry workers, charcoal burners, fishermen etc.
	Production and related workers, transport equipment operators and labourers
A 32	Production supervisors and general foremen, miners, tailors, machine tool operators, broadcasting station operators, cinema projectionists, plumbers, printers, photographers, painters, bricklayers, carpenters, construction workers, equipment operators, freight handlers, transport equipment operators, etc.
A 33	Undergoing further training
A 34	Self-employed

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II. INDUSTRIAL CLASSIFICATION LIST

Code	Industrial Area
B 00	Unemployed
B 01	Agriculture Field crops, orchards, cattle, poultry, forestry, erosion control, wildlife, fisheries, etc.
B 02	Mining Quarries, minerals, precious stones, fuel (coal), etc.
B 03	Manufacturing Food, beverages, tobacco, leather, timber, printing and publishing, chemicals, petroleum, rubber products, china, building materials, metals, other manufacturing industries, etc.
B 04	Construction Building, railway, road, airport, dam, constructions, mining works, cementation, construction of shafts, etc.
B 05	Electricity and Water Electric plants and grids, water supply plants, etc.
B 06	Trade Store and other distribution agencies, etc.
B 07	Financial Institutions and Insurance.
B 08	Real Estate
B 09	Transport and Communication Road, rail and air transport, boats, telecommunications, radio, TV, etc.
B 10	Government Administration
B 11	Community and Business Services Sanitation, social and related community services, education, medical and veterinary services, welfare, recreational and cultural services, police, fire, etc.
B 12	Hotels, Restaurants and Tourism

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APPENDIX C

EMPLOYER QUESTIONNAIRE

(To be completed based on the answers of users/employers of university graduates now working in industries in Jawa)

All answers are to be treated confidential.

Name of user/employer (If no objections) : .....

Address : (A) Now .....
.....
.....
(B) Next Year .....
.....
.....

I. Name and signature of field worker:
.....
.....
.....

II. Place and date of field work:
.....
.....
.....

III. Name and signature of coordinator:
.....
.....
.....

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January 1980

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A. Organizational Characteristics

1. Date of Establishment:

   .....

2. Name of the Establishment/Industry:

   .....

3. Address of the Establishment/Industry:

   .....

4. Address of the Headquarters:

   .....

5. Autonomy:

   (a) Unique Establishment ..... ( )
   (b) Headquarters ..... ( )
   (c) Establishment belonging to a group ..... ( )
   (d) Multi.national/Joint-venture ..... ( )
   (e) Other (Specify) ..... ( )

6. Legal Status:

   (a) Individual ..... ( )
   (b) Cooperative ..... ( )
   (c) Family Firm ..... ( )
   (d) Limited company ..... ( )
   (e) Partnership ..... ( )
   (f) Public Enterprise ..... ( )
   (g) Multi-national/Joint Venture ..... ( )
   (h) Domestic capital ..... ( )
   (i) Other (Specify)

   ..... ( )

7. City of the headquarters:

   (a) Jakarta ..... ( )
   (b) Other (Specify) ..... ( )

8. Main activity of the enterprise:

   Name of manufacturing products:

   (a) .....
   (b) .....
   (c) .....

9. Year of starting the operation: .....

10. Production process (or method of operation):

   (a) Piecework (handicraft type) ..... ( )
   (b) Small series ..... ( )
   (c) Large series ..... ( )

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(d) Continuous ..... ( )
(e) Mixture of small series and large series ... ( )
(f) Mixture of large series and continuous ..... ( )
(g) Other (Specify)
..... ( )

11. Did the establishment change its production process in the last five years?
(a) Yes (Specify) ..... ( )
(b) No ..... ( )

12. Market essentially :
(a) Local ..... ( )
(b) National ..... ( )
(c) International ..... ( )

13. Registered capital: .....

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B. Manpower Characteristics in 1980

14. Number of Employees:
(a) Full time : .....
(b) Part time : .....

15. Number of manpower (See Appendix A):

	Indonesian	Non-Indonesian	Total	(Unfilled) Vacancies
(a) Professional technical and related workers	.....	.....	.....	.....
(b) Managerial and administrative workers.....		.....	.....	.....
(c) Clerical and related workers	.....	.....	.....	.....
(d) Sales workers	.....	.....	.....	.....
(e) Production and related workers ...	.....	.....	.....	.....

16. Size:
(a) Big ..... ( )
(b) Medium ..... ( )
(c) Small ..... ( )

17. Give the best estimates you can for the following types of graduates for your concern:

	Number of employees in		
	1974	1980	1984

	1974	1980	1984
(a) Mathematics and Natural Sciences	.....	.....	.....
(b) Social Sciences	.....	.....	.....
(c) Psychology	.....	.....	.....
(d) Medical Sciences (Health)	.....	.....	.....
(e) Engineering	.....	.....	.....
(f) Agriculture	.....	.....	.....
(g) Economics	.....	.....	.....
(h) Law	.....	.....	.....
(i) Arts and Philosophy	.....	.....	.....
(j) Administration	.....	.....	.....
(k) Others (Specify)	.....	.....	.....

C. Recruitment Practices

18. What methods do you use to recruit employees graduating from higher education institution? (Choose the most important one)

(a) Higher educationan institution authorities ..... ( )
(b) Ministry of Manpower and Transmigration ..... ( )
(c) Newspaper advertisement ..... ( )
(d) Personal contacts ..... ( )
(e) "Bonding" students by scholarships ..... ( )
(f) Another method (Specify) ..... ( )

19. How important do you consider each of the following criteria in selecting employees having higher education qualification?

	Very important	Important	Not important
(a) Academic record	( )	( )	( )
(b) Aptitude tests	( )	( )	( )
(c) Interview	( )	( )	( )
(d) Past experience in job of similar type	( )	( )	( )
(e) Letters of recommendation	( )	( )	( )
(f) Physical appearnace	( )	( )	( )
(g) Marital status	( )	( )	( )
(h) Sex	( )	( )	( )
(i) Others (Specify)	( )	( )	( )

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20. What is the most difficult problem in describing a job for recruitment purposes?

(a) No correspondence between higher education institutions and employers' needs ..... ( )

(b) The graduates do not have the training the employers would like them to have ..... ( )

(c) Good performance in the academic life does not mean better job performance ..... ( )

(d) The jobs are too complex for precise specification of educational qualifications ..... ( )

(e) To determine first salary scale which is interesting enough for higher education graduates and at the same time does not necessarily slacken the spirit of other employees ..... ( )

(f) Other (Specify)

..... ( )

D. Correspondence between academic and vocational performance

21. What do you think is the degree of correspondence between academic performance and job performance?

	Graduate (Stratum 1)	Post-Graduate (Stratum 2 and 3)
(a) High degree of correspondence	( )	( )
(b) Medium degree of correspondence	( )	( )
(c) No correspondeco at all	( )	( )
(d) No opinion	( )	( )

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E. In-service training

22. In your organization do you have provision for in-service training facilities for employees graduating from higher education?

(a) Yes ..... ( )

(b) No ..... ( )

23. If "Yes", indicate the type from the list below.
If "No", use the same list to indicate the type you would like to have.
Choose the most important one:

(a) Staff away from your organization:-- Full time ( )
-- Part time ( )

(b) Training conducted in your firm ..... ( )

(c) Any other type (Specify)

..... ( )

F. Opinions about Higher Education Institutions

24. In what ways would you like to see the institutions of higher education become more concerned about the needs of your industry?

	Yes	No
(a) Formulating their curricula	( )	( )
(b) Choosing the method of instruction	( )	( )
(c) Development of new training programmes	( )	( )
(d) Carrying out research programmes related to your organization	( )	( )
(e) Other (Specify)	( )	( )

25. How would you like the following arrangement of placement services for the employment of graduates. Choose the most important one:

(a) Placement office attached to each academic department/faculty ..... ( )
(b) One placement office for the whole university ( )
(c) Placement office attached to the Ministry of Manpower and Transmigration ..... ( )
(d) Placement office attached to each trade union ( )
(e) No placement office at all ..... ( )
(f) Other arrangement (Specify)
..... ( )

G. Provision of work opportunities within organization

26. Do you offer (vacation) employment to higher education students?

(a) Yes ..... ( )
(b) No ..... ( )
(c) No opinion ..... ( )

27. Dou you have programmes which could be done by students?

(a) Yes ..... ( )
(b) No ..... ( )
(c) No opinion ..... ( )

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B. Opinions about Employee Needs

28. How important do you think each of the following factors is in making a job satisfactory for the whole employees?

	Very important	Important	Not important
(a) Interesting work	( )	( )	( )
(b) Use of special talent	( )	( )	( )
(c) Creative work	( )	( )	( )
(d) No supervision	( )	( )	( )
(e) Further studies	( )	( )	( )
(f) Improve competence	( )	( )	( )
(g) Helpful to others and society	( )	( )	( )
(h) Work with people	( )	( )	( )
(i) Good income	( )	( )	( )
(j) Travel	( )	( )	( )
(k) Supervise others	( )	( )	( )
(l) Better prospects	( )	( )	( )
(m) Secure future	( )	( )	( )
(n) Time for family and hobbies	( )	( )	( )
(o) Use of skill learned in formal schooling	( )	( )	( )
(p) Good working conditions	( )	( )	( )
(q) Good supervisor	( )	( )	( )
(r) Good mental capability	( )	( )	( )
(s) Proper attitude toward work	( )	( )	( )
(t) Opportunity to be productive in work	( )	( )	( )

29. In your opinion, how important each of the following factors is in meeting the career objectives of the whole employees?

	Very important	Important	Not important
(a) Interesting work	( )	( )	( )
(b) Use of special talent	( )	( )	( )
(c) Creative work	( )	( )	( )
(d) No supervision	( )	( )	( )
(e) Further studies	( )	( )	( )
(f) Improve competence	( )	( )	( )
(g) Helpful to others and society	( )	( )	( )

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	Very important	Important	Not important
(h) Work with people	( )	( )	( )
(i) Good income	( )	( )	( )
(j) Travel	( )	( )	( )
(k) Supervise others	( )	( )	( )
(l) Better prospects	( )	( )	( )
(m) Secure future	( )	( )	( )
(n) Time for family and hobbies	( )	( )	( )
(o) Use of skill learned in formal schooling	( )	( )	( )
(p) Good working conditions .	( )	( )	( )
(q) Good supervisor	( )	( )	( )
(r) Good mental capability ..	( )	( )	( )
(s) Proper attitude toward work	( )	( )	( )
(t) Opportunity to be productive in work	( )	( )	( )

30. What is the main product of your industry?

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A 00	Unemployed
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A 03	Aircraft and ships officers.
A 04	Life sciantists and related technicians.
A 05	Medical, dental, veterinary and related technicians.
A 06	Statisticians, mathematicians, system analysts and related technicians.
A 07	Economists.
A 08	Accountants.
A 09	Jurists, lawyers, judges.
A 10	Teachers.
A 11	Workers in religion (From the Ministry of Religious Affairs).
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A 25	Transport conductors.
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A 30	Cooks, domestic servants, waiters, bartenders, cleaners, hairdressers etc.
	Agricultural, animal husbandry, forestry workers and fishermen
A 31	Farm workers, forestry workers, charcoal burners, fishermen etc.
	Production and related workers, transport equipment operators and labourers
A 32	Production supervisors and general foremen, miners, tailors, machine tool operators, broadcasting station operators, cinema projectionists, plumbers, printers, photographers, painters, bricklayers, carpenters, construction workers, equipment operators, freight handlers, transport equipment operators, etc.
A 33	Undergoing further training
A 34	Self-employed

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II. INDUSTRIAL CLASSIFICATION LIST

Code	Industrial Area
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B 01	Agriculture Field crops, orchards, cattle, poultry, forestry, erosion control, wildlife, fisheries, etc.
B 02	Mining Quarries, minerals, precious stones, fuel (coal), etc.
B 03	Manufacturing Food, beverages, tobacco, leather, timber, printing and publishing, chemicals, petroleum, rubber products, china, building materials, metals, other manufacturing industries, etc.
B 04	Construction Building, railway, road, airport, dam, constructions, mining works, cementation, construction of shafts, etc.
B 05	Electricity and Water Electric plants and grids, water supply plants, etc.
B 06	Trade Store and other distribution agencies, etc.
B 07	Financial Institutions and Insurance.
B 08	Real Estate
B 09	Transport and Communication Road, rail and air transport, boats, telecommunications, radio, TV, etc.
B 10	Government Administration
B 11	Community and Business Services Sanitation, social and related community services, education, medical and veterinary services, welfare, recreational and cultural services, police, fire, etc.
B 12	Hotels, Restaurants and Tourism

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APPENDIX D

STATISTICAL TABLES

N.B. Due to non-response, in some cases row totals do not add up to 100%. Where row totals are more than 100%, this is because multiple responses were permitted.

Table 1. Distribution of ways of obtaining a better knowledge of work as perceived by the students (frequency and percentage)

		Preference			
		(1)	(2)	(3)	(4)
(a)	Practical job experience during a study course	530 (53.1)	369 (37)	47 (4.7)	19 (1.9)
(b)	Personally getting information from prospective employers	165 (16.5)	431 (43.2)	197 (19.7)	135 (13.5)
(c)	Reading career publications	316 (31.7)	452 (45.3)	121 (12.1)	38 (3.8)
(d)	Discussing with workers from particular field	350 (35.1)	446 (44.7)	100 (10)	30 (3)
(e)	Discussing with career teacher	384 (38.5)	431 (43.2)	94 (9.4)	33 (3.3)

(1) = most preferred, (4) = least preferred

Table 2. Factors promoting work in rural areas (frequency and percentage)

	Factor	Very important	Important	Unimportant
(a)	Financial incentives	286 (28.7)	550 (55.1)	126 (12.6)
(b)	Promotion prospects	314 (31.5)	512 (51.3)	125 (12.5)
(c)	Post of greater responsibility	435 (43.6)	482 (48.3)	40 (4)
(d)	Opportunity for a freer life	359 (36)	487 (48.8)	113 (11.3)
(e)	Cheap cost of living	253 (25.4)	515 (51.6)	117 (17.7)

Table 3. Distribution of factors discouraging work in rural areas

	Factors	Very important	Important	Unimportant
(a)	Lack of tap water, electricity, etc.	273 (27.4)	361 (36.2)	331 (33.2)
(b)	Communication and transport difficulties	460 (46.1)	444 (44.5)	63 (6.3)
(c)	Separation from friends and relatives	41 (4.1)	208 (20.9)	707 (71)
(d)	Belief that rural life is dull and slow	71 (7.1)	280 (28.1)	606 (60.7)
(e)	No scope for improving competence	225 (22.5)	504 (50.5)	216 (21.6)
(f)	Possible delays in promotion	208 (20.8)	492 (49.3)	254 (25.5)

Table 4. Distribution of the degree of ease/difficulty in obtaining a job

(percentage by faculty)

Faculty/field of study	very easily	rather easily	rather difficult	difficult	very difficult	don't know
Mathematics/Natural Sciences	6.5	34.8	37	6.5	4.3	10.9
Social Sciences	3.5	12.8	52.3	9.3	2.3	19.8
Psychology	8.3	41.7	20.8	12.5	8.3	8.3
Medicine	10.4	27.1	29.2	10.4	7.3	15.6
Engineering	8.1	54.1	23.3	1.8	0.4	12.4
Agriculture	10.6	28.7	31.9	11.7	0	17
Economy	5.4	43.8	29.2	5.4	3.8	12.3
Law	1.1	14.3	41.8	7.7	9.9	25.3
Religion/Art and Philosophy	7.1	31	33.3	9.5	2.4	16.7
Administration	0	20	40	20	0	20

Table 5. Distribution of the degree of ease/difficulty in obtaining a job through institutions

(percentage)

Institutions	very easily	easily	rather difficult	difficult	very difficult	don't know
UI	6.6	39.6	39.6	4.4	2.2	7.7
IPB	14.3	57.1	28.6	0	0	0
ITB	8.5	53.8	20.8	0	0.9	16.0
UGM	3.3	42.5	27.3	10.2	2.8	13.8
UNAIR	15.4	32.7	26.9	9.6	3.8	11.5
UNPAD	8.6	21	33.3	5.7	2.9	28.6
UNDIP	8.6	28.6	41.4	4.3	5.7	11.4
UNIBRAW	6.1	25.8	33.3	10.6	4.5	19.7
ITS	1.9	45.3	41.5	1.9	0	9.4
UNSOED	18.8	18.8	12.5	12.5	12.5	25
UNEJ	7.7	20.5	46.2	5.1	5.1	15.4
UNS	7.1	14.3	35.7	7.1	7.1	28.6

Table 6. Perceptions of characteristics making jobs satisfying

Job characteristics		(1)	(2)	(3)	(4)	(5)
(a)	Interesting work	615	328	26	2,527	2.57
(b)	Use of special talent	434	480	55	2,317	2.32
(c)	Creative work	463	487	22	2,385	2.39
(d)	No supervision	99	344	511	1,496	1.5
(e)	Further studies	439	459	69	2,304	2.3
(f)	Improve competence	331	554	53	2,154	2.16
(g)	Helpful to others and to society	618	344	4	2,546	2.55
(h)	Work with people	247	522	194	1,979	1.98
(i)	Good income	443	478	54	2,339	2.34
(j)	Travel	79	479	401	1,596	1.6
(k)	Supervise others	103	536	323	1,704	1.7
(l)	Better prospects	453	483	26	2,351	2.35
(m)	Secure future	487	446	31	2,384	2.39
(n)	Time for family and hobbies	250	636	73	2,095	2.1
(o)	Use of skill learned in formal schooling	489	438	37	2,380	2.38
(p)	Good working conditions	523	424	18	2,435	2.44
(q)	Good supervisor	289	569	103	2,108	2.11
(r)	Good mental capability	594	365	7	2,519	2.52
(s)	Proper attitude toward work	404	544	15	2,315	2.32
(t)	Opportunity to be productive in work	556	380	15	2,443	2.45

(1) very important (=3); (2) important (=2); (3) unimportant (=1);
(4) total score; (5) average score.

Table 7. Perceptions of job characteristics meeting career objectives

Job characteristics		(1)	(2)	(3)	(4)	(5)
(a)	Interesting work	647	300	24	2,565	2.57
(b)	Use of special talent	502	418	50	2,392	2.4
(c)	Creative work	517	423	28	2,425	2.43
(d)	No supervision	67	426	457	1,510	1.51
(e)	Further studies	478	439	50	2,362	2.36
(f)	Improve competence	336	577	39	2,201	2.2
(g)	Helpful to others and to society	578	373	19	2,499	2.5
(h)	Work with people	243	518	202	1,967	1.97
(i)	Good income	421	493	54	2,303	2.3
(j)	Travel	92	488	381	1,633	1.63
(k)	Supervise others	117	509	327	1,696	1.7
(l)	Better prospects	427	510	22	2,323	2.32
(m)	Secure future	450	479	27	2,335	2.34
(n)	Time for family and hobbies	252	641	60	2,098	2.1
(o)	Use of skill learned in formal schooling	472	449	37	2,351	2.35
(p)	Good working conditions	536	404	18	2,434	2.44
(q)	Good supervisor	268	574	117	2,069	2.07
(r)	Good mental capability	590	360	10	2,500	2.5
(s)	Proper attitude toward work	377	564	15	2,274	2.28
(t)	Opportunity to be productive in work	496	421	23	2,353	2.35

(1) very important (=3); (2) important (=2); (3) unimportant(=1);
(4) total score; (5) average score.

Table 8. Distribution of reasons for pursuit of higher education by the graduates

	Reasons	Frequency	Percentage
(a)	Wanted specific professional qualification	92	40.4
(b)	Bursary incentives	1	0.4
(c)	Desire for study for its own sake	17	7.5
(d)	To make oneself available for manpower needs	30	13.2
(e)	Better employment opportunities for qualified professionals	72	31.6
(f)	Other	11	4.8
(g)	No response	5	2.1
	Total	228	100

Table 9. Distribution of the most important methods for obtaining first employment for the graduates

	Method	Frequency	Percentage
(a)	Through the university graduated from	17	7.5
(b)	Ministry of Manpower and Trans-migration	2	0.9
(c)	Newspaper advertisement	38	16.7
(d)	Personal contacts with employers	73	32
(e)	Tied to the employment by binding	27	11.8
(f)	Others	61	26.8
(g)	No response	10	4.3
	Total	228	100

Table 10. Methods of obtaining a better knowledge of work, as perceived by the graduates

(frequency and percentage)

Method	Preference (1)	(2)	(3)	(4)	average score
(a) Practical job experience during the course of study (eg sandwich courses, vocational employment)	109 (47.8)	74 (32.5)	20 (8.8)	8 (3.5)	1.53
(b) Personally obtaining information from perspective employers	46 (20.2)	87 (38.2)	51 (22.4)	32 (14)	1.88
(c) Reading careers publications	47 (20.6)	102 (44.7)	46 (20.2)	10 (4.4)	1.95
(d) Discussing with workers from particular fields	65 (28.5)	102 (44.7)	33 (14.5)	10 (4.4)	1.80
(e) Discussing with career teachers	53 (23.2)	104 (45.6)	37 (16.2)	10 (4.4)	1.82

(1) = most preferred, (4) = least preferred

Table 11. Distribution of factors encouraging graduates to work in rural areas

(frequency and percentage)

Factor	Very important	Important	Unimportant
(a) Financial incentives	75 (32.9)	107 (46.9)	24 (10.5)
(b) Promotional prospect	64 (28.1)	115 (50.4)	27 (11.8)
(c) A post of greater responsibility	83 (36.4)	100 (43.9)	19 (8.3)
(d) Opportunity for freer life	34 (14.9)	82 (36)	88 (38.6)
(e) Cheap cost of living	48 (21.1)	105 (46.1)	52 (22.8)

Table 12. Factors discouraging graduates from working in rural areas

(frequency and percentage)

Factors	Very important	Important	Unimportant
(a) Lack of tap water, electricity, etc.	84 (36.8)	76 (33.3)	45 (19.7)
(b) Communication and transport difficulties	106 (46.5)	87 (38.2)	17 (7.5)
(c) Separation from friends and relatives	26 (11.4)	74 (32.5)	109 (47.8)
(d) Belief that rural life is dull and slow	30 (13.2)	73 (32)	105 (46.1)
(e) No scope for improving competence	61 (26.8)	102 (44.7)	44 (19.3)
(f) Possible delays in promotion	70 (30.7)	94 (41.2)	46 (20.2)

Table 13. Importance of criteria for the graduates' recruitment

(frequency and percentage)

Factors	Very important	Important	Unimportant
(a) Academic record	91 (39.9)	114 (50)	18 (7.9)
(b) Aptitude tests	73 (32)	126 (55.3)	20 (8.8)
(c) Interview	64 (28.1)	137 (60.1)	19 (8.3)
(d) Past experience in a similar type of job	80 (35.1)	120 (52.6)	23 (10.1)
(e) Letters of recommendation	14 (6.1)	95 (41.7)	111 (48.7)
(f) Physical appearance	16 (7)	87 (38.2)	118 (51.8)
(g) Marital status	10 (4.4)	54 (23.7)	154 (67.5)
(h) Sex	13 (5.7)	78 (34.2)	128 (56.1)

Table 14. Distribution of job characteristics satisfying the graduates

Factor	(1)	(2)	(3)	(4)	(5)
(a) Interesting work	133	84	5	572	2.6
(b) Use of special talent	67	136	16	489	2.14
(c) Creative work	77	130	13	504	2.21
(d) No supervision	11	96	103	328	1.44
(e) Further studies	48	142	26	454	1.99
(f) Improve competence	43	158	14	459	2.01
(g) Helpful to others and to society	32	156	26	434	1.9
(h) Work with people	33	120	62	401	1.76
(i) Good income	119	98	4	557	2.44
(j) Travel	11	75	131	314	1.38
(k) Supervise others	19	103	92	355	1.55
(l) Better prospects	103	116	3	544	2.38
(m) Secure future	110	101	7	539	2.36
(n) Time for family and hobbies	43	146	28	449	1.97
(o) Use of skill learned in formal schooling	73	128	19	494	2.16
(p) Good working conditions	132	83	6	568	2.49
(q) Good supervisor	63	144	11	488	2.14
(r) Good mental capability	104	113	3	541	2.37
(s) Proper attitude towards work	56	157	6	488	2.14
(t) Opportunity to be productive in work	63	129	4	517	2.26

(1) very important (=3); (2) important (=2); (3) unimportant (=1);
(4) total score; (5) average score.

Table 15. Distribution of factors meeting the graduates' career objectives

Factor	(1)	(2)	(3)	(4)	(5)
(a) Interesting work	139	77	5	576	2.52
(b) Use of special talent	89	122	9	520	2.28
(c) Creative work	88	128	5	525	2.3
(d) No supervision	18	102	92	350	1.53
(e) Further studies	71	132	16	493	2.16
(f) Improve competence	59	150	9	486	2.13
(g) Helpful to others and to society	29	145	41	418	1.83
(h) Work with people	32	118	65	397	1.74
(i) Good income	112	97	12	542	2.37
(j) Travel	7	79	12	191	0.84
(k) Supervise others	17	111	88	364	1.59
(l) Better prospects	106	109	3	539	2.36
(m) Secure future	106	106	6	536	2.35
(n) Time for family and hobbies	40	146	32	444	1.94
(o) Use of skill learned in formal schooling	83	120	17	506	2.22
(p) Good working conditions	122	92	5	555	2.43
(q) Good supervisor	56	149	12	478	2.09
(r) Good mental capability	110	108	10	556	2.43
(s) Proper attitude towards work	57	155	6	487	2.13
(t) Opportunity to be productive in work	102	112	3	533	2.33

(1) very important (=3); (2) important (=2); (3) unimportant (=1);
(4) total score; (5) average score.

Table 16. Means of co-operation between the institutions of higher education and the enterprises, as perceived by the employers

Means of co-operation	Frequency (percentage)
(a) Formulating their curricula	59 (47.2)
(b) Choosing the method of instruction	39 (31.2)
(c) Development of new training programmes	73 (58.4)
(d) Carrying out research programmes related to the enterprise	67 (53.6)

Table 17. Distribution of the most important recruitment methods practised by the employers

Method	f	(f)[1]	%	(%)[1]
(a) Higher education institution authorities	1	(1)	0.8	(1)
(b) Ministry of Manpower and Transmigration	11	(11)	8.8	(11.7)
(c) Newspaper advertisement	32	(32)	25.6	(34)
(d) Personal contacts	42	(42)	33.6	(44.7)
(e) "Bonding" students by scholarships	-	-	-	-
(f) Others	8	(8)	6.4	(8.6)
(g) No response	31	-	24.8	-
Total	125	(94)	100	(100)

(1) Adjusted

Table 18. Degrees of importance of the selection criteria used by the employers in recruiting graduates

(frequency and percentage)

	Criteria	Very important	Important	Unimportant
(a)	Academic record	23 (18.4)	59 (47.2)	16 (12.8)
(b)	Aptitude tests	31 (24.8	53 (42.4)	13 (10.4)
(c)	Interview	32 (25.6)	60 (48)	8 (6.4)
(d)	Past experience in job of similar type	53 (42.4)	42 (33.6)	12 (9.6)
(e)	Letters of recommendation	12 (9.6)	46 (36.8)	44 (35.2)
(f)	Physical appearance	4 (3.2)	37 (29.6)	58 (46.4)
(g)	Marital status	3 (2.4)	20 (16)	76 (60.8)
(h)	Sex	9 (7.4)	43 (34.4)	47 (37.6)

Table 19. Distribution of the difficulties in describing jobs for recruitment

	Most difficult problem	f	(f)[1]	%	(%)[1]
(a)	No correspondence between higher education institutions and employers' needs	12	(12)	9.6	(13)
(b)	The graduates do not have the training the employers would like them to have	21	(21)	16.8	(22.9)
(c)	Good performance in the academic life does not mean better job performance	19	(19)	15.2	(20.6)
(d)	The jobs are too complex for precise specification of educational qualifications	18	(8)	14.4	(11.5)
(e)	To determine first salary scale which is interesting enough for higher education graduates and at the same time does not necessarily slacken the spirit of other employees	8	(8)	6.4	(8.7)
(f)	Others	14	(14)	11.2	(15.3)
(g)	Non response (includes those who have higher education graduates)	33		26.4	
	Total	125	(92)	100	(100)

(1) Adjusted.

Table 20. Distribution of job characteristics satisfying to the employees, as perceived by the employers

	Characteristics	(1)	(2)	(3)	(4)	(5)
(a)	Interesting work	46	60	7	265	2.12
(b)	Use of special talent	32	67	18	248	1.98
(c)	Creative work	41	59	14	255	2.04
(d)	No supervision	17	45	46	190	1.52
(e)	Further studies	17	55	39	203	1.62
(f)	Improve competence	39	65	10	257	2.06
(g)	Helpful to others and to society	8	66	34	190	1.52
(h)	Work with people	21	59	30	211	1.69
(i)	Good income	51	59	5	276	2.2
(j)	Travel	3	41	64	155	1.24
(k)	Supervise others	9	63	37	190	1.52
(l)	Better prospects	35	74	2	255	2.04
(m)	Secure future	37	74	3	262	2.09
(n)	Time for family and hobbies	12	85	13	219	1.75
(o)	Use of skill learned in formal schooling	20	67	22	216	1.73
(p)	Good working conditions	47	65	2	273	2.18
(q)	Good supervisor	39	73	5	268	2.14
(r)	Good mental capability	50	65	1	281	2.25
(s)	Proper attitude towards work	32	84	9	273	2.18
(t)	Opportunity to be productive in work	45	62	1	233	1.86

(1) very important (=3); (2) important (=2); (3) unimportant (=1);
(4) total score; (5) average score.

Table 21. Distribution of job characteristics meeting the employees' career objectives, as perceived by the employers

	Job characteristics	(1)	(2)	(3)	(4)	(5)
(a)	Interesting work	47	61	7	270	2.16
(b)	Use of special talent	35	65	14	249	1.99
(c)	Creative work	36	73	6	260	2.08
(d)	No supervision	14	34	60	170	1.36
(e)	Further studies	13	71	26	207	1.66
(f)	Improve competence	27	77	4	239	1.91
(g)	Helpful to others and to society	6	72	30	192	1.54
(h)	Work with people	18	68	24	214	1.71
(i)	Good income	47	64	4	273	2.18
(j)	Travel	7	43	58	165	1.32
(k)	Supervise others	7	68	34	191	1.53
(l)	Better prospects	36	75	1	259	2.07
(m)	Secure future	35	78	2	263	2.1
(n)	Time for family and hobbies	9	82	13	207	1.66
(o)	Use of skill learned in formal schooling	28	57	24	222	1.78
(p)	Good working conditions	41	73	1	270	2.16
(q)	Good supervisor	36	77	2	264	2.11
(r)	Good mental capability	51	64	-	281	2.25
(s)	Proper attitude towards work	38	71	-	256	2.05
(t)	Opportunity to be productive in work	47	59	-	259	2.07

(1) very important (=3); (2) important (=2); (3) unimportant (=1);
(4) total score; (5) average score.

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